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Shadows and Straws

IN A RECENT PUBLICATION we find an article on the new power-plant and tunnel construction in Washington, including the following statement about the controversy over the site selected and upon which the plant is now being erected. "The opposition made strong claims that the stacks on the power plant would obstruct the view of the Capitol. The plant is located approximately three-quarters of a mile from the Capitol Building on the Bank of the Potomac, in one of the lowest spots in Washington. In order to determine whether the view would be obstructed, a test was made by sending a balloon to the height of the stacks. This balloon could not be seen from the Capitol, nor was the writer able to see the location of the plant from the Capitol. In his opinion, therefore, there is no danger that the beauty of our National Capitol will be destroyed by this plant." The writer signs himself Walt A. Plumb. But one is not sure whether the spelling of the word "Capitol" in the last paragraph was an intentional effort to mislead people into believing that he meant "Capital," or whether it was just plain ignorance or even a proofreader's error. Possibly he sincerely believes that the power house will in no way affect the beauty of Washington, and that he is not concerned solely with the effect it would have upon the Capitol building itself, as his spelling would indicate. But publicity has a way of reacting, at times, in an unfavorable manner, and we hope that Mr. Plumb will live long enough to repent of his prediction. To see with the eye alone is one thing. To see with the imagination is quite another thing, and lifts men above their fellows; and those men who see the Washington of the future, and see that lowest spot in the Capitol transformed into a river-bank worthy of a great nation, sicken with regret and sorrow when they see the mistake that has been made. Its beginning was thoughtless; its continuance might have been prevented had it not been for a blind resentment of criticism, which was transformed into an indomitable passion then to continue at no matter what cost. But it seems a great pity to deal with only one of the points raised by "the opposition," as though that were all there was to the question. And as the details of construction recited by Mr. Plumb in his article were undoubtedly furnished by the Treasury Department, we think it perhaps safe to assume that his opinion may have been colored by the same source, regretful as we are in again pointing out the wilfulness with which the protests which emanated from every quarter of an outraged nation have been dealt.

IT IS ALWAYS EASY to pick out a horrible example. Mr. John Ihlder, writing in the *Survey* of September 2, tells the interesting story of what has happened to the city of Flint, Michigan, "a village grown over night into a city." As a village, it had "wide, tree-shaded streets lined with comfortable frame houses, each surrounded by its yard." Today, the automobile industry has added 50,000 people to the 13,000 of fifteen years ago, and there has developed the inevitable acute rise in land values, the inevitable acute shrinkage in the size of lots, the inevitable acute dwindling in the size of rooms, the inevitable acute necessity of crowding more people into the smaller rooms, and the inevitable lowering of human standards. Mr. Ihlder says that there is indignation over the hundreds of flimsy shacks, but a welcome for the "improvements" which parade impressive fronts, borrow light and air from their neighbors, and hide dark rooms and unventilated water-closets. "Flint looks at the outside."

We all know the rest of the story. It does not distinguish Flint, except in the rapidity of the process. It is as old as centralized industry. But when we find a horrible example it becomes necessary to place the responsibility. Mr. Ihlder charges it to the automobile manufacturers. "Upon them it rests; they found Flint a pleasant little country town, they are changing it into a city. . . . Have they a moral right to concentrate upon that part of their work which yields the greatest profits and either disregard or give only shreds of attention to the other part which means the making or the wrecking of their city?" Not at all—but—

How Could Flint have escaped? Only in two ways. Either by refusing to allow the automobile industry there to establish itself or by at once enacting building laws which would have prevented any lowering of housing standards. We do not believe that any American community possesses the power to enforce any such action as the first, and we think there are few that would even wish to take it. All of which brings us to the 13,000 citizens of the Flint of fifteen years ago and leads us to ask why they are not equally responsible for what has happened? We might answer by saying that the manufacturers had the choice of developing an entirely new community of their own instead of spoiling an existing one, to which we reply that the success of the undertaking depended upon the utmost speed in marketing a tremendous output. There was no time to wait for a new community to be built. Merely building rows of houses does not make a community. There must be vast social adjustments to lend attraction and convenience to life, and those are vital factors in determining where manufacturers shall locate their industries. If it had not been Flint, it would have been some other.

Why Did the Citizens of Flint fail to take any preventive action? We think it is safe to answer that they would not have known what action to take, had they wished, so recent is our small knowledge on the subject. If they are to be charged with a fair share of the responsibility, it must be on the grounds of lack of desire rather than absence of knowledge. And why the lack of desire?

We are accustomed to the maledictions cast upon land speculators. To them are commonly attributed all the evils of modern slums, jerry-built suburban developments, and the destruction of architectural values. But is not every urban land-owner a land-speculator? If not by choice, he is sure to be one by compulsion, for the value of every piece of urban land is subject to change. Under the present system of individual freedom to deal with such land, it has no fixed value.

But is not most of it bought and held in the hope of a rise in value, rather than through the fear of loss? Assuredly so; and thus what is commonly called land speculation is merely the acute manifestation of a chronic condition which began with the Exodus. The United States of America was born through a land speculation on the largest scale then attempted. The Hudson Bay Company, almost as old, still remains a land speculation in which the shareholders seem to be doing very well.

It was the speculative value of their land which probably shut the eyes and the ears of the people of Flint to the visions and predictions of the few who no doubt tried to save their city. There are always such seers and prophets in every community, useless as they seem to be, and we doubt not but that their voices were raised in Flint.

THE TRUTH IS that Flint was just as helpless and unthinking and bewildered and individually selfish as every other community would have been under the same circumstances and will continue to be until there comes a recognition of the fact that communities which permit these acute manifestations of land speculation do themselves a great and costly injury. There must also come an understanding of the fact that they are likely to break out with increasing rapidity and violence. That is to say, the time of their incubation and development is being constantly shortened through the ever quickening processes of social transformation. Shepherds no longer drive their flocks in search of new fields and pastures green. They swarm across the ocean in ships and swoop down on Flint before it has time even to think of what to do with them. Tremendous industries rise like mushrooms in the night and produce social and economic disasters which we are just beginning to understand—just beginning to see how to meet and cope with—and better still, how to prevent them.

ABOVE AND BEYOND all the preventive measures which so far have been taken in this country there stand out the new building restrictions of the city of New York. They are the most significant recognition of the danger of acute outbreaks in land speculation and the corresponding injury to the community which can be offered as evidence of the nation-wide malady we have pointed out. They impose conditions upon all property, by first dividing it into groups or zones, and then prescribing the kind of building and the character of occupancy for each structure in each zone. Undue stress may easily be given to the law, through failure to recognize that it is only a law, probably very imperfect, and subject to endless changes. It will not wholly prevent land speculation, since the bordering edges of various zones can hardly escape acquiring a speculative value through the knowledge that readjustments will become necessary, but it should have a potent influence upon rendering land values stable. It is as a principle that we must accept this movement and remember that the price of its retention and the price of its full and continuing usefulness will be that eternal vigilance which can resist individual effort to make money at the expense of the community and render least harmful those necessary readjustments which will perhaps never cease.

TO ARCHITECTURE all of these things are freighted with a great hope. On the heels of acute land speculation there follows building speculation. It is and must be inevitable, and it is probably through the tangible evidence of what building speculation was costing the community of New York City that an acceptance of the new restrictions was made possible.

Is it not safe to predict that through such movements toward stabilizing land values architecture will gather impetus and appreciation? Is it not idle to deplore the effects upon architecture of speculative building when speculative building is as inevitable as what has happened to Flint? Is it not equally futile to attempt any comprehensive education of the public as to the value of architecture when conditions inhibit wide use of the information it is sought to diffuse? Must we not increasingly devote more energy to the soil, rather than to the seed? Must we not revise our educational processes so that they shall include a full understanding of the conditions which now surround all but a fraction of the building enterprises of modern times, and thus inspire the architect of today and of the future to give freely of his knowledge and training toward the amelioration of those basic conditions? It was through no art-loving doctrinaires, socialistic theorists, or one-sided reformers that New York City began to grapple with its problem. It was through the realization by hard, cold, and costly business experience that building speculation not only brought a loss in taxable values to the community but threatened to tear down the whole fabric of realty value throughout the city.

STABILIZED LAND VALUES will discourage building speculation by removing both the fear of loss and the hope of large speculative profits quickly taken through sale at an inflated rental value. Consideration of the safe and dependable rent-producing ability of the building will succeed the cheap and often unsafe sale-insuring quality which now guides so much building construction, and then architecture will begin to come into its own. This will not be tomorrow—but only after many tomorrows—for we are all learning that the goal is unattainable and that life is merely trying to keep our direction true.

Flint has gone astray and will come back only through learning by bitter and costly experience, but the responsibility is not lightly to be placed.

CONGRESS HAS ADJOURNED, and the prediction so freely made that the introduction of an omnibus public-building bill was merely to offer fence-repairing materials for Congressmen seeking reëlection seems to have been true. No action on the bill was taken. Items gleaned from the press, here and there, show plainly that the inclusion of an appropriation in the omnibus bill is freely accepted as a guarantee of a new building and as a sound reason for reëlecting the Congressmen who sponsored the bill.

There has been brought to our attention the case of a citizen of Manchester, New Hampshire. He chided the *Mirror* of that city for making it appear that the inclusion of an item of some $200,000 in the omnibus bill was actually an appropriation and thus a reason for the reëlection of Representative Sulloway. He was publicly ridiculed as an unpatriotic citizen, for with an adroit avoidance of answering his criticism, he was pointed out as opposing a great public benefit. Among those who read this there may be some who are familiar with the present aggregation of granite which houses the post office at Manchester. It is a fragment of Post-Office Renaissance which is beginning to look doubtful, now that the new Carpenter Library, the Art Institute, and the Amoskeag Bank Building, and numerous examples of good domestic architecture have lifted Manchester out of the architectural morass into which she was falling. Are there not some citizens who see that it is wrong to spend whatever is left of that $200,000—after acquiring the land under a provision in the bill which bears a most sinister aspect—in "improving" that which will be rendered more ugly by the process? Is the Carpenter Library so

quickly to fail in fulfilling one of its greatest functions?

WHEN THE SENATE adjourned, it had listened to no report of the Committee on Library, to whom had been referred Senator Newlands' resolution calling for a suspension of the power-house construction pending an investigation by experts. Thus appears to vanish one chance of arresting construction, thus making the final removal more costly to the nation. What happened to the Committee? Why did it bring in no report whatever? Must we believe that the protests of thousands of citizens were so lightly regarded? Of the character and extent of these protests the Committee had ample knowledge, acquired at the hearings and through the submission of carefully prepared data, gathered by engineers, architects, and laymen at great private expense both of money and time. They will be dismayed but not discouraged.

A MEMBER of the Institute recently forwarded us the following letter. It had been sent to him by the advertising manager of a well-known publication, and began with a quotation from a letter which it had received from one of its subscribers, we assume, and which ran as follows:

"I am building and will be glad of any suggestions for suburban homes." The letter then continued:

"The above is briefly the request we recently received. Are you in a position to aid or supply this information to Mrs. Blank Blank, Blankville, B. K.?

"We understand you can fulfil the requirements outlined. If not, please advise. Is it therefore to your interests to get into communication immediately with this inquirer and thereby effect probably a mutual transaction?

"It is our aim to render a service both practical and useful. May we have your suggestions or criticisms toward improving our efforts in your behalf?

"We assure it is our pleasure to serve both reader and advertiser to the best of our ability. May we hear, from time to time, how far successful you are in this and in similar future instances?

"P. S. Have you sent us your catalog and printed matter, so that we are thoroughly familiar with your business?"

The most charitable construction to place on the affair would be to imagine that a zealous clerk, endeavoring to perform a very legitimate service between the readers and the advertisers of the publication, had overstepped the limits of propriety in a too eager desire to obtain results and, finding no advertiser to whom such a communication might well be referred, had hit upon the idea of trying out the idea on lapsed subscribers. But the member of the Institute who promptly pointed out the impropriety of such a letter was not honored with a reply. Nor was any answer received to the communication which we addressed to the advertising manager in question. But the inquirer might be chagrined to learn that her request had been used as a bait to recover a lapsed subscriber.

The Question of Advertising

"Advertising tends to lower the dignity of the profession, and is therefore condemned."

SO runs the paragraph in the Circular of Advice, the interpretation of which has always seemed to offer a field for controversy. It contains three words which will bear some scrutiny. First, what is advertising? Manifestly it is as necessary and unavoidable a factor in the business experience of the architect as

in that of any other man. It is a thing which has always existed—long before the printed page came into existence—for there never was a time in the history of the world when men have not looked upon the worthy and notable achievements of a fellow with words of praise. Those words, passing slowly from lip to lip, have built up many a practice in every profession. Without wishing to be dogmatic, we affirm that no great practice in any profession and no great success in any business have ever been built, or can be built, without that form of testimony. But modern ways are not content with the slow passing of that word in the ancient manner, and seek to expedite it by other means, including the desecration of everything which Nature and Man have sought to make beautiful. For let us not forget that, with all the aids it brings and all the needs it satisfies, the abuse of advertising has left it a very mixed blessing.

The architect cannot conduct his business without advertising. His name in the directory is nothing less. The announcement on his office door is only a form of advertising. His name at the head of his stationery advertises him. So do his friends, his clients, and sometimes his enemies. These things are unavoidable and justifiable advertising, and it is therefore clear that, when the paragraph to which we refer was framed, its intent was to refer to that form of publicity which is now currently known as advertising, and which pretty generally applies to the purchase of some form of space for money. But publicity may be, has been, and is daily being bought with a coinage far more to be deprecated than mere money. It was not the money consideration which led the Institute to adopt that paragraph. Every member of the profession knows the endless variety of means commonly employed by those architects who have not the slightest respect for the profession which has made their practice possible. They consider that they owe it nothing but that all the labor which has gone into the building of it was merely that they might plunge their hand in and draw forth a livelihood. That attitude is the curse of all professions and callings.

Many of the forms of advertising to which we refer are thoughtless. Others are deliberate efforts to get work by any and every means. There are practices which can be condemned in unmeasured terms, and there are others which hover over the border line of professional honor and seem to defy any common classification. Yet we are constrained to believe that in professional practice, as in other things, the question is never difficult to decide for the man who cares. There are always things which gentlemen do not do, and one of the essential things which go to make up an architect is a knowledge of the gentleman's code. We use the word in its real sense, and not as a symbol of the mere polished manner and the polite way. There have always been gentlemen, and their ways are founded upon a fairly simple precept.

It is undoubtedly true that the sharp struggle of modern business has tended to make architects careless in the means by which they secured publicity. The advertisement sought from manufacturers and dealers and which paid for the exhibition catalogue, against which the Journal has waged battle ever since it was founded, was a thoughtless manner of securing publicity. It levied a tribute upon a class of men who did not like to refuse to make their contribution. The psychology of the solicitation was and is the taking advantage of the fear of refusal. Thousands of advertising schemes of every description are annually carried out in this country by similar means. Most of those who promote them do not realize the wrong they do, because they do not understand that advertising is a commodity which has a definite value, and that when the value given is incom-

mensurate with the price charged there has been a fraud. It is an ugly word, but it is the right one, and architectural year-books, exhibition catalogues, and similar enterprises supported by advertising are frauds, thoughtless ones, without doubt. They do not give value received to the advertiser, and we doubt very, very much whether they give even as great a value to the architects whose work is pictured therein. Their circulation is not of a kind destined to accomplish much publicity in the place where publicity is both desired and needed.

Now it is urged, here and there, that because architects have been thus careless in the past, they should immediately make reparation, and acquire honor and prestige by resorting to plain advertising in which they pay for the space used. We do not understand that anyone seeks to influence individuals to enter upon an advertising campaign, but that the advertising should be undertaken by larger or smaller groups, as the case may be. In the last number of the Journal we pointed out that the Board of Directors of the Institute, in accepting the report of the Committee on Publications, which Committee had been charged with the gathering of evidence and information on the subject, has expressed the opinion that such advertising is not expedient, and we offered the thought that the Committee on Publications, in reporting adversely, had been influenced, not by the question of dignity, but by the fact that it is not possible to advertise the architect in any such manner, for lack of any definite standard of ability.

What is the meaning of that word "dignity?" We do not understand that it applies with any peculiar monopoly to professional men. We do not understand why it does not apply equally to all men, in whatever calling they may be engaged. To us it connotes that degree of honor and faithfulness and good service and sound workmanship which every man should carry into his life-work, whether he be a digger of ditches or the president of a great republic. We have seen many a workman shake his head in disgust at the character of cheap work upon which he was engaged, and we incline to the belief that it was because the dignity of his trade was being slain for money, and, in the process, his own dignity was being outraged.

But there is, perhaps, a peculiar application of the word "dignity" in the sense in which it is used in that paragraph of the Circular of Advice. And that application is closely related to the word "profession," which in some strange manner has become almost dissociated from "I profess." Professions were originally renunciations and consecrations, were they not? They meant that men gave up the pursuit of those gains which were offered by commerce and industry for the sake of entering upon a career which offered more largely of the joy of work and a possibly smaller recompense as a reward.

We do not say that this should be so. The architect, in no wise different from other men, is worthy of his hire, but we have to remember that modern building operations, where millions may be converted into a structure within a twelvemonth, offer an opportunity of reward which was never enjoyed by the architects of only a few decades past. Conditions have forced the architect to concentrate and develop in a manner which would have been almost unthinkable to the practitioners of a hundred years ago. The slow and delightful process of building a great structure through a long period of years has been exchanged for the almost bewildering complexity of generalship, which requires that an architect shall deliver a million-dollar finished structure within a year of the turning of the first spadeful of earth for the foundations. Yet we doubt very much whether the proportionate earning power of the architect has very largely increased. The cost of administration imposed by the speed of building eats

heavily into the commission received, while the bare overhead charges are manyfold greater than even a few years ago. We merely advert to this phase of the question under consideration, in an effort to show the change in conditions and the influence they have exerted toward stimulating architects to seek greater work and greater recompense. As a direct consequence, they have probably stimulated much of the present desire, as expressed here and there, for some sort of a publicity campaign, in which architects shall seek to interest the public to a greater extent than before in the services which they have to offer.

But, through all of these changes and evolutions, is it true that the word "dignity," in its peculiar application to the profession of the architect, has lost its position and is doomed to dethronement as an obsolete conservatism? We do not think so. We believe that the betterment of the profession will come about through a better understanding of its meaning, and not by heaving it overboard as a piece of ballast no longer necessary. Professional dignity, aside from the qualifications which we have stated to be common to all callings, is based upon the fact that a true professional man has only his brains and his knowledge and experience to sell. These things are a part of his personality, and, in the days when professionalism was developing as a calling, it was deemed that the only recognition to which a man was entitled was that which came to him as the fruit of his work. To the world he was on trial. He had his apprenticeship to pass through. His opportunity to demonstrate his skill was often long delayed. And it was through the devotion to that faith in the necessity of proving himself that he shrank from trying to cut corners. It was through his reluctance to publicly proclaim a skill and a knowledge which he felt to be a part of his very self, that he established the principle which opposed itself to advertising. He left that to the quacks, confident that the kind of people who wanted good work would find him out as time went on. And if, by this process, he made it possible for the quack to flourish along with himself, it is not easy to prove that he could have prevented the quack by resorting to the quack's methods. History affirms to the contrary. Prominent among the names honored on the walls of the new Institute of Technology buildings is that of Pasteur. What name could more simply proclaim the ideal which every man should carry into his calling? To read the story of his life is to understand professionalism in its fullest sense. Not as a sacred aristocratic shibboleth but as an attitude toward one's chosen calling. We know of no name more surrounded with that dignity which the world honors above all other things, and that is the meaning which we read into that word dignity in the paragraph from the Circular of Advice which we have quoted. Now let us examine the question of advertising on its economical merits.

It is not thinkable that advertising architecture will increase the volume of building. Quite unlike the case of a manufacturer who wishes to market a new product or device, architects are confronted with a fairly fixed building volume—one which they cannot affect, or, if at all, to an inappreciable degree. Therefore it seems fair to assume that what they wish to accomplish, when they speak of advertising, is the diversion of some portion of the present building operations which do not pass through the hands of an architect into the hands of some member of the profession, or the transfer of work from the incompetent to the competent. We cannot read any other economic thought into the project, and we do not believe any other is there concealed. We may attribute some of the desire on the part of certain men, at least, to bring about better conditions from the purely civic or esthetic

point of view; but it is our opinion that architects could accomplish so little in this respect, by paid advertising, that it would be folly to attempt it. The volume of publicity now given to architectural and civic projects is increasing at a notable rate. The Journal alone has inspired an amount of newspaper and magazine publicity which needs to be understood in order to appreciate the rapidly changing conditions affecting architectural publicity.

Now as to the problem of diverting building operations from various others into the hands of architects. We believe that, before any valuable opinion can be expressed upon the economic phase of this question, it would be necessary to make a comprehensive analysis of the situation in different localities. It is our opinion that, even were it deemed an expedient undertaking, not enough could be accomplished to justify the cost, which would probably be greater than is thought by those who have not familiarized themselves with the expense of a thorough and persistent advertising effort—and no other is worthy of consideration.

As to accomplishing the transfer of work from the incompetent to the competent, before what tribunal can the question of design be taken?

We believe that all development of public taste in architecture must be founded upon the demonstration of the architect's ability to serve his community in contributing toward the wise solution of the great fundamental physical problems which are confronting us everywhere; for we believe that the public can be led into the realm of architectural beauty only by the paths of architectural utility. We believe that this has always been so, and that it will always be so, and that, if architecture attempts to impose itself upon the world as a superficial adornment, it will sink into the depths.

As to how the profession of architecture may be advertised, we believe that no architect can view the work of the Institute since its foundation without acknowledging the debt of the profession to the principles it has laid down, and to which more and more men have committed themselves. As long as large numbers of architects are willing to offer their services for nothing, by furnishing elaborate drawings and solutions in competition scrambles, by making and submitting, without charge, sketches and studies for any kind of a building for anybody who happens to have purchased a piece of real estate, how can it be expected that that portion of the public which comes in contact with that sort of architect can be made to believe that the profession is a serious one and that its members are really worthy of their hire? Is it not true today, as it always has been, that every profession enjoys that measure of public esteem and respect which it bestows upon itself? Is it not true that the real welfare of the profession of architecture is inseparably bound up with the growth of the American Institute of Architects and the corresponding elevation of standards of practice? Is there any way in which architects can so well advertise their profession as by distributing the Circular of Advice and the Canons of Ethics laid down by the Institute as evidence of the service which all architects should be prepared to offer?

There are those who will take issue over that word "distributing," and say that such a method should be supplanted by one which would afford a more universal knowledge. Then we can see no harm in proclaiming those documents by any means within the power of those who wish to do so. For our part, we wish they might be writ large wherever their appearance would not offend the eye. The profession of architecture would then be advertised in the fullest and truest sense.

[*The subject of individual advertising will be more fully developed in the next number of the Journal.*—EDITOR.]

Stephen Hallet and His Designs for the National Capitol, 1791-94*

By WELLS BENNETT
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The Marginal Notes

Considerable interest attaches to all the marginal notes still to be read on a majority of the drawings, although inspection shows their importance subordinate to that of the letter already quoted. By the presentation of these notes, so as to correspond in sequence to the order of the drawings just determined, their bearing on the identification and grouping will be apparent. The first competitive plan (Fig. 3) carries this note: "A 1 Plan of the Ground & Principal floor of the Project for the federal Capitol sent from Philadelphia to the Board in July 1793 by S. Hallet," and the two sections (Figs. 4 and 5) of the second competitive project are marked "A 6 1st Section of Plan A 5" and "A 7 2d Section of Plan A 5," respectively. That these two presentations were considered

*Continued from the last number.

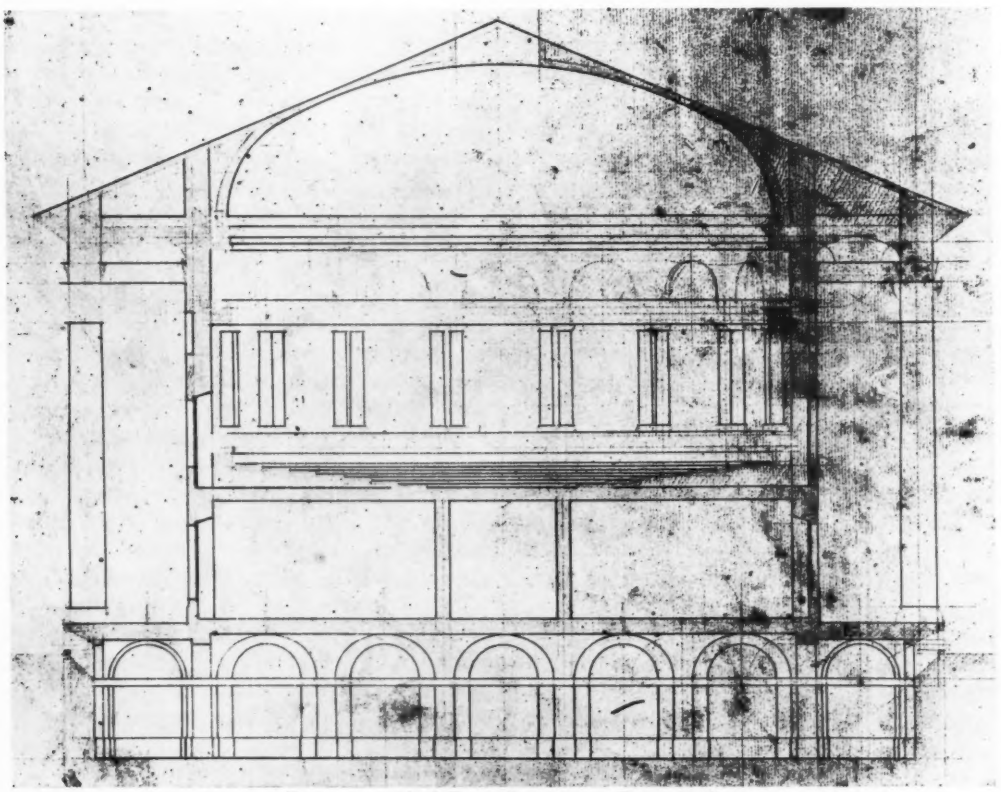


FIGURE 4. "A 6 FIRST SECTION OF PLAN A 5"

as essentially the same design is borne out by the use of the same letter "A" in distinguishing the several drawings of each set. For the next set submitted the group letter "C" is used, the "ancien dessein" or "fancy piece," having been given the letter "B." Figs. 1 and 2, belonging to that scheme, are denominated as "principal floor plan B" and "Plan B2," respectively. The plan, Fig. 6, is marked "C The Ground plan of a Plan laid before the Board in October, 1793, S. hallet." Fig. 7 has the note: "C 3 Elevation of the principal front C 1 C8." Fig. 8 is entitled "Cross section Plan C 1." The next design has the letter "D" but it is apparent only in the note on the plan, Fig. 9: "D A the Ground floor of Plan for the Capitol Laid before the Board in January 1794." Figs. 10 and 11 have no accompanying notes, but obviously belong with Fig. 9. The last design offered before the prize award (Figs. 12, 13 and 14) has on the section the title: "E 6 Section of Plan E 1 S. hallet" and the almost obliterated note: "A ground plan accompanied this which Docr Thornton sent for together with the plan in pencil." On the plan only the title "Com. Plan Principal floor" appears, while on the elevation there is no writing whatever. The conference plan (Fig. 15) has this note: "No 6 Comr federal Capitol Sketch of the Ground work. Part of the foundations were laid by some time in August 1793. Now useless on account of the Alterations Since Introduced. S. hallet." On the later set, Figs. 16–18, only one note, one on the plan, is to be found: "No 14 Comr federal Capitol the original though incompleat Sketch of the Ground floor fixed upon last Spring as answering besides the purpose mentioned upon No. 5 and subsequent that of a convenient and Elegant Communiquation to the apartments all round the Court; by means of a Piazza with a terrass over which will also afford a fine and convenient Communiquation between the apartments of the Second Story: S. hallet." The No. 5 mentioned was, of course, as already suggested, identical with his fifth project, "E." The plan (Fig. 16) brings out the East front as the authorities desired. The plan reproduced in Fig. 19 is labelled: "No. 35 (15?) Comr P-a-5 federal Capitol Sketch which as well as those no 8, 9, 10, 11, 12, 13 & Some other that have not been preserved to try the best way to bringing Eastward the apartments in 5 & recessing in that no 6 so as to produce a centrale Projection in the East front and a court or areal in the Center of the Building so as to avoid Darkness S. hallet." Both this plan and that shown in Fig. 16 are variations of the open court scheme.

In regard to the competitive designs "A," "C" and "D" one noteworthy discrepancy appears between the marginal notes and the documents previously discussed. Although the contemporary letters show, without doubt, the correctness of the dating previously stated (set "A" submitted in its first form July 17, 1792, set "C" about October 8, 1792, and set "D" in January, 1793), the dating of the three sets in the notes by Hallet is later by precisely one year. The conclusion seems obvious that in arranging the drawings, and making notes in later days, the French designer made an error of one year as to the time of presentation of each set of the competitive series. On these erroneous dates Mr. Glenn Brown based the theory that Hallet's preserved drawings were all made after the award in an attempt to supersede Thornton's accepted design, and that Hallet's inspiration for the last drawings came from Thornton's design itself.

C. The Development of Hallet's Design Through Successive Projects. The "Fancy Piece"

The establishment of the chronological sequence of the drawings will now permit us to trace the growth of the design through the various studies. It has been seen that the "fancy piece," Hallet's first drawing of

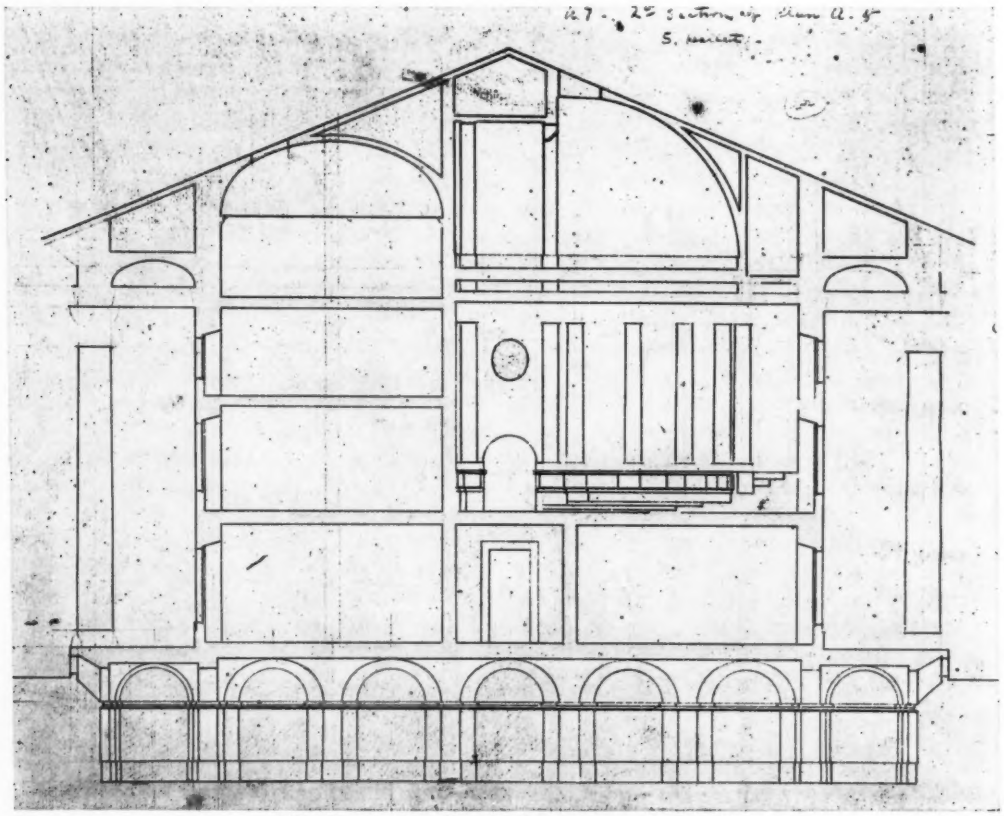


FIGURE 5. "A 7 SECOND SECTION OF PLAN A 5"

a Capitol, was shown to Jefferson and the Commissioners before the final draft of the competition programme had been written. There could be in this plan no effort to fulfil the provisions of the advertisement as published. There was no Conference Room; there were none of the required subordinate rooms; and the necessary difference between the accommodations for the Senate and House was not indicated. Much confusion over this design is apparent in the conclusions, both of Mr. Townsend and of Mr. Glenn Brown. Failing to appreciate the possible meanings of the term "fancy piece," Mr. Townsend assumed that title to describe a perspective drawing. His additional misconception, shared by Mr. Glenn Brown, that the "fancy piece" was the first competitive scheme, has reënforced the belief that the first competitive drawing no longer exists. The demonstration that the "fancy piece" was a pre-competition suggestion, however, removes all these difficulties.

The First Competitive Plans

The first drawings presented in competition showed a peripteral temple, the required rooms being fitted in the rectangular cella. Any expression in plan was necessarily constricted by the rigid circumscribing form. Following the suggestions of the Commissioners' letter: "The Stile of Architecture of yours has attracted,

the Distribution, of the Parts, is not thought sufficiently convenient. Perhaps it may be necessary to cover more Area and add a large room or two—" Hallet prepared a scond set of drawings, adhering to the "Stile" desired, but enlarging the proportions. The Corinthian order was used as before, but by increasing the diameter the desired enlargement of the whole structure was made. It will be noticed that the rooms in the second scheme are much more spacious, the Conference Room probably balancing the Representatives' Room on the opposite end. The fact that Hallet discarded the scheme of his "fancy piece" after showing it to Jefferson, with Jefferson's stated preference for "some one of the models of antiquity," and a noticeable resemblance between the spirit of Hallet's first competition drawings and Jefferson's Virginia State Capitol, make most natural the inference that Jefferson suggested the temple plan to Hallet.[1]

The Two Projects in the Manner of the "Fancy Piece"

In asking that Hallet prepare a third project in the manner of the early drawings it may be assumed that the Commissioners seized upon the "fancy piece" as a tangible form, obviously more adaptable to their purpose than the peripteral temple. The derivation of this third scheme from the "fancy piece"—"mon ancien dessein"—is very clear. In plan a proper difference is indicated between the House and Senate chambers; and, in effecting the desired economies, offices and committee rooms are substituted for the light courts and monumental circulation. The slight changes in elevation plainly show the intended economy in the omission of all sculpture and columns from the main mass, save only the engaged columns of the central pavilion. The height of the order is reduced, decreasing the heights of all subordinate rooms, central lobby and corridors. Upon examination of this plan in October, 1792, the Commissioners found the simplified "fancy piece" they had ordered not sufficiently spacious. They had not understood the technical impracticability of an effort to "accomodate the interior of the fancy piece to those arrangements." It had proved impossible to fit a Conference Room, with subordinate rooms and adequate circulation, in the central body of the pre-competition plan, and still obtain an exterior which would be acceptable. Realizing, perhaps, their failure in architectural planning, the Commissioners asked that he seek Washington's advice. That Hallet had the President's criticism and suggestion in undertaking the fourth project is shown by the designer's statement, recall-

[1] Jefferson's influence upon the Capitol designs is exhaustively discussed by Mr. Fiske Kimball in his forthcoming book, "Thomas Jefferson, Architect," the proof sheets of which he has kindly allowed the author to examine.

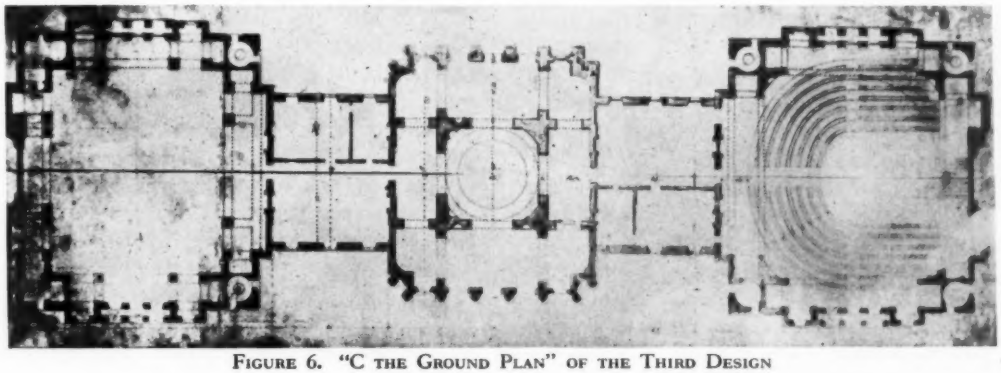


FIGURE 6. "C THE GROUND PLAN" OF THE THIRD DESIGN

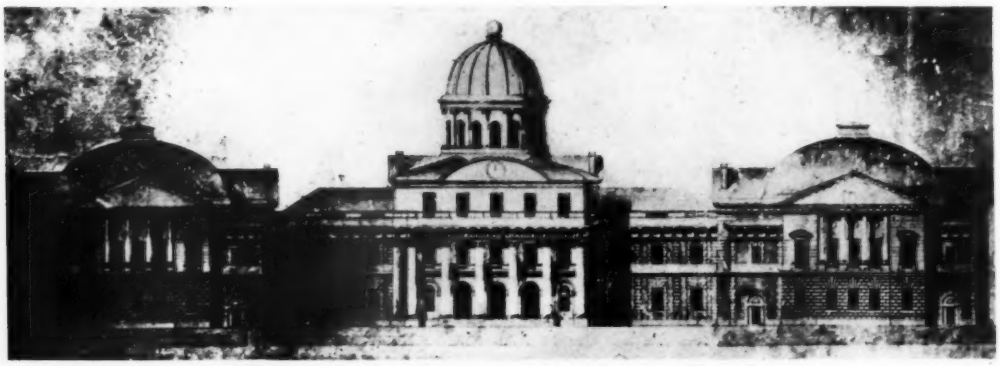


FIGURE 7. "C 3 ELEVATION OF THE PRINCIPAL FRONT"

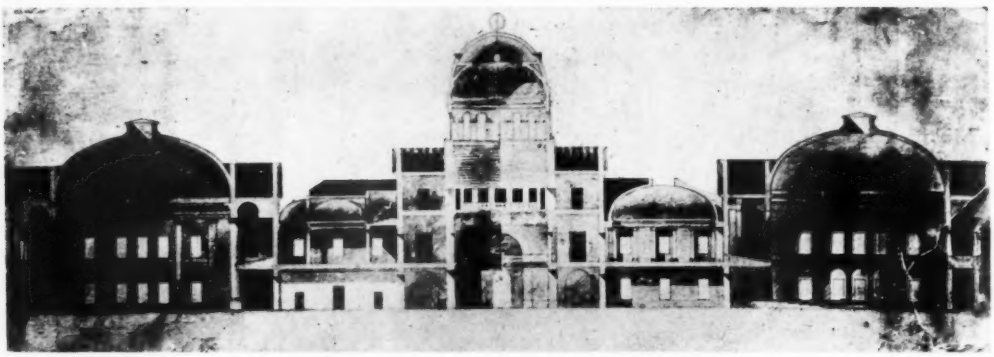


FIGURE 8. "CROSS SECTION GF PLAN C 1"

ing to Jefferson the occasion of this consultation. He refers to this plan: "que Jai produit dernierement au President en votre avec le dessein quil m'avoit lui meme pointé comme ce qui lui paroissait convenable au sujet." In the direction of elaborate detail this study returns to the "ancien dessein." There can be no doubt that the design pointed out by Washington, and followed by Hallet, was the Pantheon in Paris. The similarity of "C 3 Elevation of the principal front" (Fig. 7) to Soufflot's elevation in the central portico and dome is very marked, and the adoption of the cruciform Pantheon plan, here used by Hallet for the first time, is significant. A sketch by Jefferson[1] for the Capitol, likewise an adaptation of the Paris Pantheon, makes it probable that Jefferson suggested the imitation of this prototype. In this new scheme the circulation is more open than in the "ancien dessein," and a Conference Room balances the East portico on the transverse axis. The proportions, both in plan and elevation, show a refinement compared with the preceding studies, which explain Hallet's pride at having perfected his earlier effort. Although the President commended the drawings of this set to the Commissioners as having great merit, a definite judgment was deferred until Dr. Thornton's plan could be presented, and there is little doubt that Hallet knew that Thornton had become a strong competitor. He realized, doubtless, that a striking design, even though less economical, might quickly be preferred by the judges to his

[1] Fiske Kimball: Thomas Jefferson, Architect, Figure 132 and corresponding passages in the text.

own presentations of their ideas. His conscientious following of the suggestions, first of one and then of another of the authorities, had bound Hallet down to a series of alternations between magnificence and parsimony, and he felt that he had never had an opportunity to do himself justice.

Hallet's Final Competitive Design

Though only a month intervened before the final judgment, Hallet attempted in that brief time to put his knowledge of the site and his experience with the programme into a totally new project. "Enfin depuis mon retour de Philadelphie Je me suis occupe du Plan dont la Description est ci Jointe. Plus instruit des necessités locale et prenante pour cette fois sur mois la choix des formes Jesperois l'offrir au concours comme la premiere production qui soit reelement de ma composition." Of this design the plan only was completed, and presented at the judgment. In the award as announced to Hallet the two competitors fared alike as to the premium, and the President favored the use of Dr. Thornton's plans for the actual structure. Hallet protested that the judgment was unfair in that he was not allowed time to complete his sections and elevations. Although his claim was not allowed, he finished the set, for the East elevation and a section are preserved with the plan.

The contention that in all the plans subsequent to "D" Hallet copied Thornton's design has been shown to rest primarily on the erroneous marginal notes. Nevertheless it may be well to add the following rebuttal, respecting the "nouveau plan," "E." Thornton, who was in Philadelphia,[1] did not finish and submit his drawings to the Commissioners in Georgetown until

[1] As evidence that Thornton had no aid in preparing his drawings, Mr. Glenn Brown stated that they were prepared in the West Indies where Thornton had formerly lived. The records of the American Philosophical Society of Philadelphia of which Thornton was a member show that he was present at meetings of the Society November 2, 1792, January 4, January 18, February 15, and April 5, 1793, thus proving that he was in Philadelphia at least four months before presenting his drawings to the Commissioners in March. Mr. W. B. Bryan also notes that a letter to Thornton from the Commissioners Nov. 15, 1792, is addressed to him in Philadelphia (op. cit., p. 197, note).

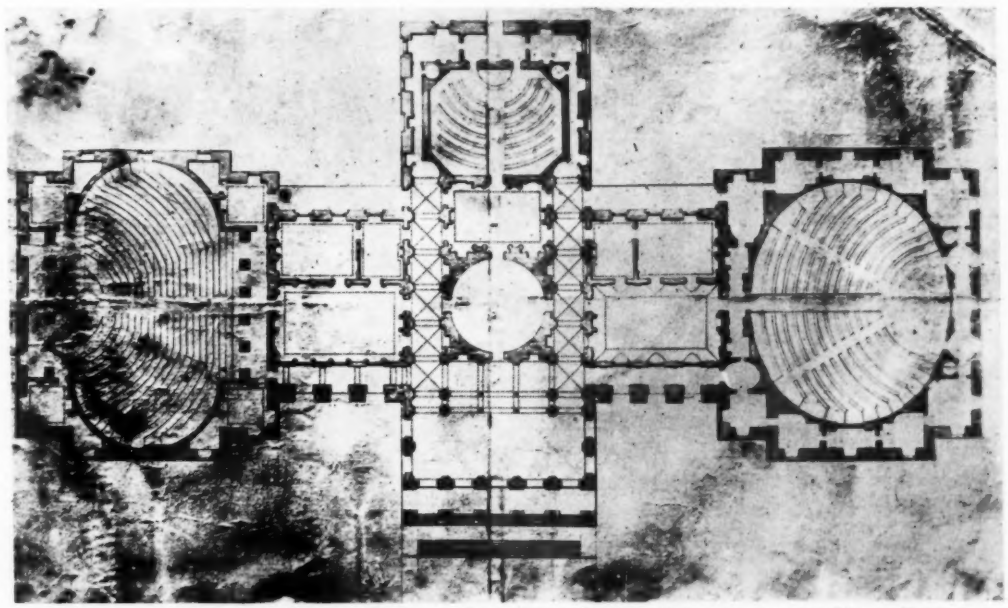


FIGURE 9. "D A, THE GROUND FLOOR OF PLAN," THE SECOND VARIATION OF THE FANCY PIECE

sometime between March 3 and March 11, before which latter date, at least, Hallet, who had been in Georgetown since the preceding December, sent in his "nouveau plan." It is thus improbable that Hallet had seen Thornton's design at all, and highly improbable that it could have influenced a drawing so near completion. On the contrary, Hallet's "nouveau plan" is in spirit a natural outgrowth of his own previous designs. It is merely more direct; the symmetry in elevation is not so forced; the Senate is in better proportion to its use, and the rooms for the Executive are now more monumental. The Conference Room, then considered highly important, is made circular, but holds the same place as in the preceding plan. Mr. Glenn Brown appears to believe the saucer dome borrowed from Thornton, though he

FIGURE 10. ELEVATION OF PLAN "D"

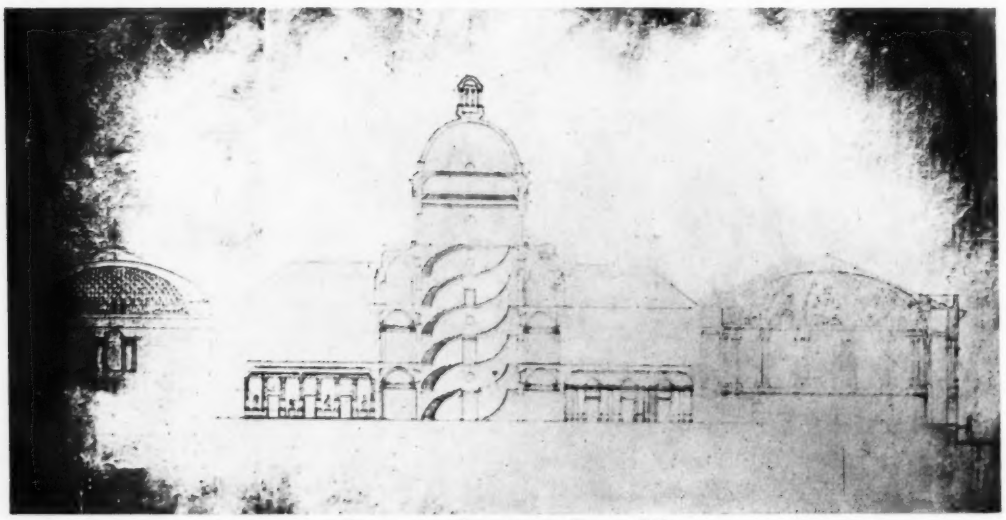


FIGURE 11. SECTION OF PLAN "D"

does not produce Thornton's competitive plan, nor attempt to reconstruct its provisions. In the absence of any positively conflicting proof, the adoption of this form of dome might more logically be ascribed to Hallet's increasing knowledge of the tastes of Washington and Jefferson. Jefferson profoundly admired the Roman Pantheon, and Hallet's letters indicate that he knew of Jefferson's liking for "spherical architecture." This set of drawings is merely a natural culmination of Hallet's competitive designs.

That there were, to be sure, many points of similarity between it and Thornton's design, which gave rise to the mutual accusations of plagiarism, is shown by the fact that Hallet's next design, which is closely similar to this one of his, could still be considered as essentially like Thornton's. The similarity in the last competitive designs was natural in view of the precision which the wishes of the authorities were assuming at the time they were undertaken.

Unfortunately for Hallet, the decision in favor of Thornton's plan had already been made by Washington and Jefferson before they knew of Hallet's similar scheme, which indeed never came before them. In spite of the "description succinct," which attempted to explain its provisions, they did not realize its character; and the scheme made later by Hallet thus appeared to them not as a development of Hallet's own design but as a modification of Thornton's.

(*To be continued*)

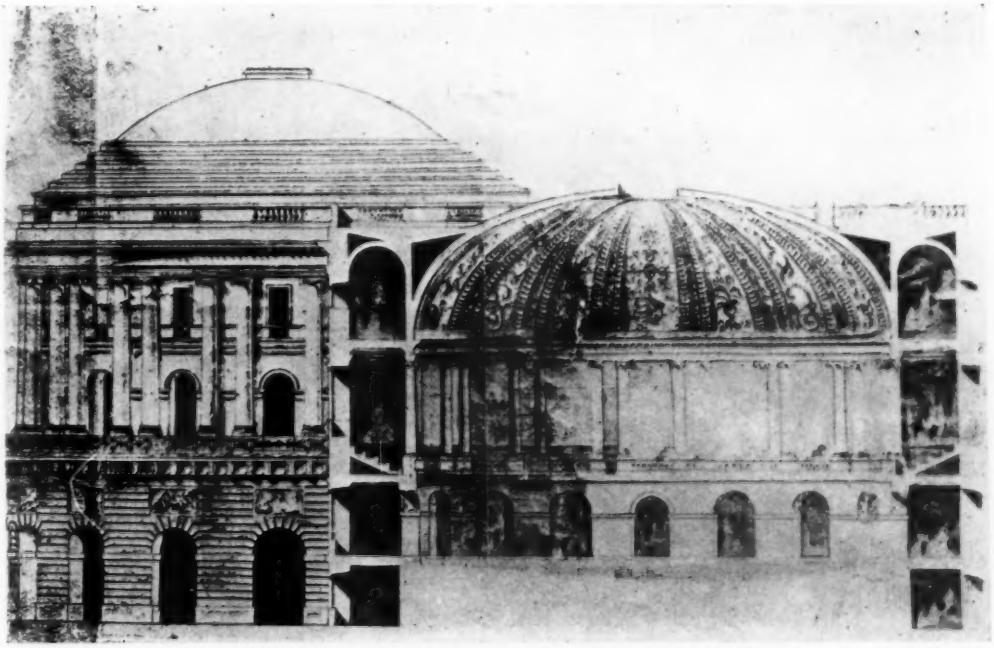


FIGURE 12. "E 6 SECTION OF PLAN E 1. S. HALLET."

Ancient Cliff Dwellings of the Mesa Verde

By MARK DANIELS
Former Landscape Engineer of National Parks

The force of the argument that the organization of labor unions has resulted in a material advance in methods of construction seems to be somewhat upset by the condition of the ancient ruins in Mesa Verde National Park. Walls are still standing that have withstood the ravages of many centuries, and, to one who is accustomed to inspecting masonry construction, evidences of skilful workmanship still remaining would seem to justify the contention that the labor union was as far from the mind of the aborigine as was the riveting machine.

There is a belt running in a northeasterly and southwesterly direction through the southwest corner of Colorado and into Arizona in which the ruins of the Cliff Dwellers of nearly a thousand years ago seem to be merged and intermingled with the villages of more modern Indians. Whether this type of construction can be traced further south into the Mexican country or not has not been determined, although there are some investigators who contend that the progress of the ancient Cliff Dwellers can be traced from the Yucatan Peninsula to Colorado. As to this, however, there seems to be a great deal of contention, so much so in fact that most authorities on the subject are agreed that even the Mokis and Navajos are in no way related to the Cliff Dwellers who built in the caves of the Mesa Verde.

Here lies a mystery that would seem to justify further and more thorough investigation on the part of our Federal Government; for, while there are certain features about the construction of the villages in the cliffs which are almost identical with those on the mesas of Arizona, there is still a radical difference in methods of construction and in styles of architecture which would seem to justify the contention that the two races were quite distinct. For example, there is, in the villages both of the moderns and the ancients, a predominance of kivas, or ceremonial rooms. Judging from the appearance of the remains of Cliff Palace, the twelve hundred inhabitants of this once thriving village must have spent most of their time in ceremonies, religious or otherwise, for there seem to be more kivas than

Oraibi, one of the largest of the villages, illustrating the result of several generations of additions, reaching five stories
From a sketch by J. J. Mora

almost any other form of construction. Yet there is a radical difference in the form of construction and in the arrangement of these ceremonial rooms. In addition to this, the work of the stone-masons amongst the ancients seems to be of a much higher order than that of the modern tribes.

In order to appreciate the problems of their city building, as it were, it is necessary to know something of their religions and customs. Primarily, as with all aboriginal tribes, the actuating and predominant force in their community life was religion and superstition. No doubt the ancient Cliff Dwellers worshiped the same general type of gods as do the Mokis of today. These gods are all underground, and have little or nothing to do with the upper elements. As a result, the kivas were excavated and located beneath the surface of the village terraces. In the ruins in the Mesa Verde, the kivas are all circular in form with six vertical pilasters, over which a roof was constructed of cedar poles laid sufficiently close to one another so as to permit the pavement of sand and clay, which constitutes the surface of the terrace, to be continued over the kiva. The entrance to the chamber was through a small rectangular hole in the roof, and the devotee entered by the way of this trap-door by means of a ladder. The kivas were constructed of the same pattern to the minutest detail, but why they should be so numerous it is difficult to determine.

No doubt the only light that can be thrown upon the question of the rambling, yet more or less picturesque, arrangement of the rooms and chambers in the Cliff Dwellings must come from a study of the existing conditions amongst the Moki Indians. The fact that the Moki villages are all built on the tops of the mesas constitutes the most radical difference between their habitations and the Cliff Dwellings, which are always built in great natural caverns in the cliffs. Yet if one is able to make the comparison, eliminating this difference, points in the order of arrangement become obviously identical. In the case of the Mokis, the apparently haphazard addition of one set of rooms over another to an original single unit is the product of their social customs. When a man marries a maiden, contrary to the white man's custom, he goes to live with the family of his bride. This naturally necessitates an additional wing for the new addition to the family, which is generally built where the bride chooses. This custom is continued throughout the lives of the generations, and, unless a predominance of male children are born, the group is apt to become a large one, housing a sufficient number to constitute a clan. Obviously the time will come when more male children will be

Back view of Walpi, built on the very edge of the mesa and reached by paths in the stone along the face of the cliff. The second mesa is shown in the distance
From a sketch by J. J. Mora

Balcony House shows the only example of balcony construction. The balcony is seen to the right of the picture. The parapet wall in front of the balcony overhangs a depth of several hundred feet. The circular chambers in the foreground are kivas, over which the floor of the terrace once existed. Note the stone lintel of the window.

From a photograph by Mark Daniels

born to this particular clan, and, upon their departure to live with the families of their wives, certain rooms and wings will become vacant and abandoned. This is no doubt the secret of the sealed chambers in the ruins of the Cliff Dwellers, in which mummies were found under conditions that gave conclusive evidence of these rooms having been sealed before the entire abandonment of the village.

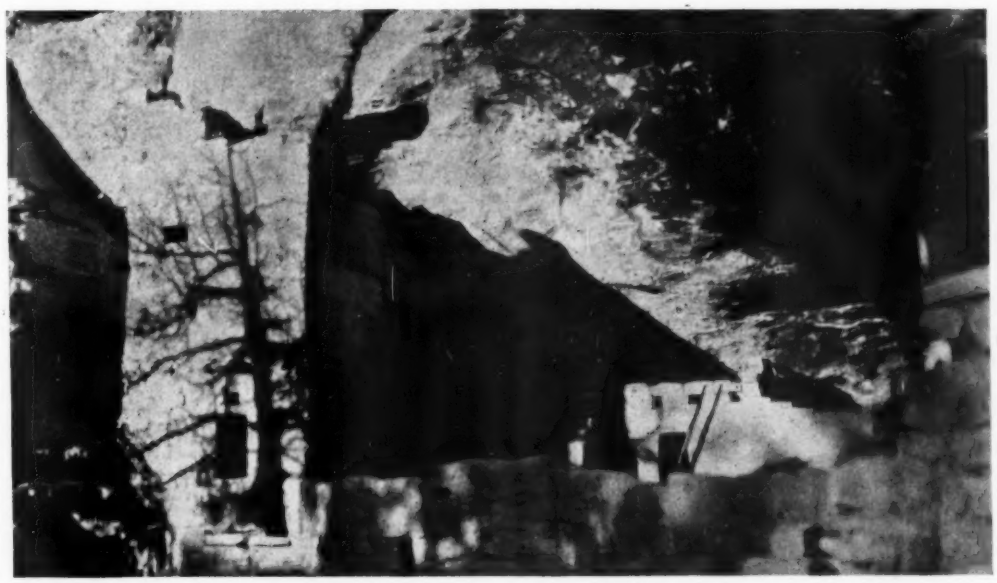
Due to the fact that the Cliff Dwellers lived in huge caves, the necessity for water-drains from their roofs was eliminated, as also was the necessity for chimneys. In the caves, the smoke was allowed to rise to the stone roof of the cave, whence it found its outlet by flowing along the sloping surface to the roof until it reached the outer air. As to just what conditions of draught they encountered in their problems of fireplace designing, nothing is known except that their stoves and fireplaces were of a most primitive form. The Moki villages, on the other hand, being in the open, were confronted with the problems of roof-drainage and chimney-construction, which latter, in turn, lead to a further development of fireplaces and chimney-corners. One will frequently find, therefore, most picturesque and charming corners in their structures where deep shadows are cast in the brilliant sunlight by projecting roof drains and black chimney-pots silhouetted against the sparkling sky.

The Cliff Dwellers seem to have been considerably more energetic in their work and more ambitious for the attainment of structural effect than the modern Indians. Their structures are mostly of hewn stone laid up in bonds similar to the bonds of the modern brick-mason, and in many instances with a precision that would seem to indicate the presence of the plumb-line. The lintels of their doors and windows were generally one slab of stone of sufficient strength to support the weight of the walls above. The window-sills occasionally projected from the surface of the wall, as in modern architecture, while the thresholds were nearly always several inches above the surface of the floor. One of the most curious features in the construction of their doorways is the small ledge about two and a half feet above the threshold, upon which the inhabitant rested his hands in order to lift his feet and swing them over the threshold. This type of construction gives to the doors a curious T shape which, in some instances, is not at all unpleasing. One would think that a people living in the open, as these people must have done, would be fearless of small animals at least, yet I can think of no other reason why the thresholds should have been raised eight or ten inches above the floor unless it was to protect the women from the terror of visiting mice.

In Balcony House there is a court at the extreme end of the village which is walled off and accessible only through an outer doorway in this wall. The

A view of Cliff Palace showing all of the village with the exception of the Speaker Chief's Tower and surrounding ruins. The circular chambers in the sunlight are all kivas. The circular tower is the only one now standing in cliff-dwelling village construction.

From a photograph by Mark Daniels



A tower in Spruce Tree House, bearing on its wall one of the few examples of mural painting

From a photograph by Mark Daniels

court is surrounded on three sides by structures which form the outlines of the terrace, the edge of which overhangs a drop of several hundred feet to the floor of the cañon below. The front of the terrace is protected by a parapet wall, and the building facing the parapet is decorated with a balcony running from one end of the structure to the other. It is the only example of a balcony to be found in cliff-dwelling architecture, and may have been used at one time as a means of communication between the room of some dusky Romeo and the boudoir of his Juliet.

A chimney

A great deal could be written about the architecture of the Cliff Dwellings. The elements in Speaker Chief Tower, which rises four stories high, alone might justify several thousand words. And then there are their towers, their lookout posts, their grain-bins, their grinding-bins and innumerable other features, all of which are interesting from many points of view. But, in order to throw a little light upon their mysterious remains, it would seem advisable to point out what the Moki does in his village.

As before stated, the Moki builds his city on the top of a mesa close to the edge of the bluffs. The accompanying sketch of Walpi illustrates the character of their sites. They do not build so much in hewn stone as do the Cliff Dwellers, and seem to have adopted the principle of lath and plaster in the construction of their walls. Perhaps the use of adobe as a wall covering was introduced as a result of the first visit of the Spaniards in the sixteenth century, for there seems to be a touch of modernism in the way they plaster their rough walls with this natural substitute for lime and hair.

They make further use of plaster in their interior construction and in the building of their chimneys. Their fireplaces are generally one of three forms, and almost always placed in a corner. If the inhabitant feels particularly energetic, he may build a rectangular fireplace which takes on somewhat the character of our modern fireplace with a mantel. In order to do this, it is of course necessary to build a frame of sufficient strength to carry the hood, which frame is then thoroughly plastered. Of the corner fireplaces there are two types, one in which the hood is supported by a beam across the corner, all of which is built up in wood and adobe plaster; the other is a lighter construction, in which the hood is supported by thongs suspended from a beam in the ceiling. The chimneys are almost invariably built of adobe and stone and crowned with a pot, the bottom of which has been removed.

Their interior decoration consists of woven baskets and cloths, colored pottery, and cochinas, or miniature effigies of their gods.

The most striking resemblance between the implements of the modern Indians and the ancients is the construction of their mealing-troughs. These are practically identical.

There is so much of wonder and beauty to be seen in the Southwest of the United States that it is astonishing that so few of our citizens have ever visited the country. The trip is not arduous, and is replete with features of intense interest. I have touched here only on the dwellings of the Mesa Verde and some of the features to be found in the dwellings of the Moki Indians, but there are other places of interest in the Southwest that have an equally potent lure.

An automobile trip over the Apache Trail from Globe to Phoenix, Arizona, will carry the tourist by several abandoned ruins of Cliff Dwellers, and if approached with the proper mental attitude, will prove a considerable mental stimulus.

The skill with which the hewn stones were laid in Cliff Palace is well illustrated here. Note the projecting window-sill and the preserved condition of the wall.
From a photograph by Mark Daniels

The Real Meaning to Architects of the Movement for the Adoption of the Quantity System

By SULLIVAN W. JONES

The compelling force which shapes our point of view and dictates our course of action is necessity, and necessity is no respecter of men or opinions. In each field of man's endeavor there are always the few who through close study and interested application acquire greater powers of insight and perception than their fellows. It is these few who catch necessity's first faint call, who first sense the trend of things, and become actuated by ideas. Necessity has decreed an economic reform in the building industry. Of that there is abundant evidence. Many ideas for effecting such a reform have been advanced by as many minds. Some of these ideas have been visionary and impracticable; others are being worked out; and still others are working. The test of the value of an idea is its power to gather advocates, or dollars, or both. The only way to justify an idea is to make it work.

The Demand for a Reform of Methods in the Building Industry

The response to the demand for reform is widespread and is finding expression in many efforts perhaps not generally recognized as related. The movement for the adoption of the quantity system; the formation of ever-expanding industrial and trade associations and the consolidation of hitherto unaffiliated associations, to facilitate the discussion of economic and technical problems and for the exchange of views on methods of production and merchandizing; the work of the government bureaus and professional societies to the end of stabilizing the market through dissemination of accurate data and the establishment of standards by which products may be judged more intelligently; and the new Standard Documents of the Institute are all the developments of ideas for placing industry on a sound economic basis, and through these methods the building industry needs and is receiving the attention it demands.

Each of these efforts has gathered to itself an army of enthusiastic advocates and workers; each is acquiring momentum; each is pregnant with power for accomplishing the intended results. Not one may be checked or controlled by the will or ambition of the mind that conceived the initiating idea. The development of all such efforts is, and always will be, controlled by a consensus of opinion and not by the opinion of the individual, except in so far as the individual may influence thought. If we hope to make our efforts bear fruit, we must work together. We can not achieve results, in the broad sense, if we all pull in different directions, each striving to thrust his ideas down his co-workers' throats. Co-operation and the coördination of effort is the key to success. Our understanding of that prevailing truth has come to us gradually through the failure of other less modern and less enlightened methods.

A Discussion of the Arguments Advanced by Mr. G. Alexander Wright

These abstract thoughts occur to me in connection with my purpose of discussing the movement for the adoption of the quantity system and particularly in connection with certain statements on that subject made and widely circulated by Mr. G. Alexander Wright. My chief reason for discussing Mr. Wright's views is that they afford an excellent premise from which to make some observations on certain considerations of the quantity system which are just now in the minds of all those interested in or working for its adoption.

I approach such a discussion with a mixed feeling of determination and hesitancy. Determination, because of the belief that Mr. Wright's statements have made upon his readers an unfortunate impression that ought to be cleared away for the good of the cause; and hesitancy, for the reason that discussions seldom alter convictions, because they have a way of centering about words and not the ideas which the words are intended to convey. Whatever the effect of Mr. Wright's statements has been on the architect, the effect upon the Institute's official family has been a stimulation of its interest in the quantity system, with the result that the Institute will undoubtedly be asked to declare its attitude on the subject at its next convention. So, even though I do not agree with Mr. Wright on many points, I am very glad he has spoken. Moreover, it is quite natural that such a discussion should center about statements made by Mr. Wright for he is an authority and his name and the quantity system will always be intimately associated in the minds of those who think or speak on the subject. He has worked unselfishly with the zeal of an enthusiast for many years to secure this needed reform in our present methods of estimating and his labors are widely known.

The Impossibility of Fixing upon Standard Units as a Preliminary to the Adoption of the Quantity System.

Mr. Wright asserts that standard units for the measurement of materials—perhaps several standards for different zones—ought to be established as a preliminary to the adoption of the quantity system. Units of measurement are indispensable, and units which are standard, that is, generally accepted and used, will unquestionably simplify the employment of the system. There can be no doubt, therefore, as to the theoretical advantage of establishing such units as a preliminary step. But I do not believe such units can be established in advance, and if we delay using the quantity system until they are established, the time for its adoption will never arrive. The work of standardizing is a task of discouraging proportions, requiring the patient application of a number of well-informed minds for a period of years. One man or even a number of men animated by intense enthusiasm for the reform might establish units which would be at least temporarily practicable. But units thus arbitrarily established would not become standard. The Bureau of Standards and the technical societies that function in establishing standards have found that all those interested in the work or affected by it must be consulted, and the standards, to be standards, must be arrived at through the widest possible coöperation and by the consent of all. Another difficulty is that standards have the tendency to change frequently in the natural process of adapting themselves to new conditions and requirements growing out of development. The standards for the measurement of materials entering into construction will show the same tendency to change, and probably even more than standards in other fields, because there is no market so restless and unstable as the one which contributes its products to the work of construction, and because of the extraordinarily rapid growth of the industry and improvement in methods.

Neither do I believe that the quantity system depends for its satisfactory employment upon the establishment of units for measurement that are standard, or for that matter, on the establishment of any units other than those commonly used and understood by bidders in the locality of the work upon which bids are taken. The fact is that, if the units used in the preparation of bills of quantities differ from those with which the bidders are familiar, confusion and misunderstanding will result.

I have already said the way to justify an idea is to make it work. If there are enough persons making a living out of the building industry who believe that the quantity system will correct the conditions of which they now complain, the time has come to justify the idea by making it work. The units of measurement will take care of themselves. They will be established gradually and standardized in the normal development of the system. The surveyors jointly and in conference with builders will undertake the work of standardizing measurements as a means of expediting the service. As the number of surveyors increases, we shall have local associations and ultimately a national association, all formed with the objects of establishing units for measurement and setting up other rules for the conduct of the business. That is what has always happened in all such movements and that is what is going to happen in this case, Mr. Wright's objections notwithstanding.

The Surveyor's Bond

It is maintained by Mr. Wright that the surveyor should be placed under bond guaranteeing the preparation of accurate bills. In controverting Mr. Wright's claim it may be argued that quantity surveying is a profession and must be maintained as such. If we put the surveyor under bond, his status changes just as surely as would the architect's if he were obliged to guarantee costs. If we insist upon a bond from the surveyor, we shall furnish him with the motive for producing bills of quantities safely padded. Unfortunately, I am forced to admit the necessity of such a guarantee as a temporary expedient. Owners are in the habit of considering themselves protected by lump-sum bids and contracts for fixed amounts, and it will not be easy to wean them from this feeling of security which, in most cases, is a myth.

The Question of Reference to Drawings in Bidding Under the Quantity System

Mr. Wright declares that bills of quantities should be so prepared that reference by the bidders to the drawings and specifications will be unnecessary. I do not believe that the preparation of such bills will ever be possible in this country. The method of handling work of construction, especially of our large and complex buildings, is a most important factor in determining costs. It is in this connection that the bidder's experience, knowledge, and ingenuity contribute largely to his success in securing contracts. If the architect or surveyor undertakes to establish the *modus operandi*, responsibility for the safe conduct of the work, now properly the contractor's, would then rest upon the architect and surveyor unless a change was made in the law.

The Status of the Quantity Surveyor

Mr. Wright would have us disapprove of the efforts of certain organizations which are in the

business of preparing guaranteed bills of quantities. Apparently Mr. Wright's sole reason for disapproval is that these organizations are seeking profit. It seems to me that their efforts are altogether commendable, whether we believe in the value of the quantity system or not. The work of such organizations has been, and must be for some time yet to come, largely educational. A campaign of education in any field entails expenditures usually made with the hope of return long deferred. What is there that is objectionable in a dignified and honest effort to sell one's service and to secure a reasonable return on invested capital? Mr. Wright works, we all work, because we get something we want or need in return for our labor. The quantity system is a hobby with Mr. Wright. He spends his money on it as I put my surplus earnings into planting trees. The fact that the quantity system is Mr. Wright's hobby does not make another's effort to make it a profitable business contemptible, or low, or mercenary, even if standards for the measurement of materials have not yet been established. Mr. Wright's charge is certainly unjust and obviously ill-considered.

Adjustments Under the Quantity System

A paper prepared by Mr. Wright, and read before the Society of Constructors of Federal Buildings at its convention in January of this year, contains an explanation of the application of the quantity system to the adjustment of prices due to changes in the work called for under the original contract. Mr. Wright, in effect, states that the units of materials involved in such changes are priced and paid for or deducted upon the basis of the unit prices in the original bill of quantities. "Thus there can be no dispute on either side about the value of extras or omissions." I, too, believed at one time that the use of a bill of quantities solved that vexing question of the true values of extras and omissions in just the manner stated by Mr. Wright. I have, however, become convinced that any attempt to dispose of the question through the use of unit prices for worked materials previously fixed upon will result unsatisfactorily either in undue profit to the contractor and the corresponding loss to the owner, or *vice versa*. The conditions under which changes are usually made in the work during its progress are so many and so variable that they cannot be taken account of in fixing the original unit prices. Very occasionally, such changes can be executed under conditions closely simulating those surrounding the execution of the work originally contemplated. In such cases, and only in such cases, can the original unit prices be applied with fairness to both parties to the contract.

English surveyors have solved the problem of adjusting extras and deductions by placing at the bottom of their bills of quantities an allowance for so many days' work at an hour rate for each of the trades involved, and for so many units of the various unworked materials at prices named by the bidder, against which changes are charged. A "day's work" account they call it; we would refer to it as a "cost" account. That is the only method which, in my judgment, can be used for determining values which are fair and equitable. But even that method can be and often is diverted to the advantage of an unscrupulous contractor.

The Application of the Quantity System to Mechanical Equipment

It is a serious question in my mind whether the quantity system can ever be used successfully in connection with plumbing, electric wiring, and heating. It is safe to assert that such work is never installed as it is indicated on the drawings. A bill of quantities presupposes a definite and binding layout which can be substantially adhered to in execution. Such layouts for the work of equipment could be prepared and incorporated in the original drawings from which the bills are prepared, if we had the time before taking bids, to complete all details and show the exact location of every pipe and fitting, conduit and duct, as well as the structural features, so that all interferences would be avoided and the most economical and at the same time the most efficient and sightly arrangement determined upon.

But, if my views are correct, all these questions are incidental to the use of the system. They are not fundamental. The important thing is to decide whether or not the quantity system is the answer, or a partial answer, to the need for better business methods in the building industry. Obviously it has certain very marked advantages over the haphazard and wasteful methods of estimating now employed, and those advantages will be realized in proportion to the extent to which the system is used. It is not necessary that we should swallow the whole dose at once.

The Great Possibilities That Would Inhere in the Adoption of the Quantity System

I have expressed the view that the quantity system is only one of the many manifestations of the need for improvement in conditions. It is the only plan for reform that has been put forward as a means of reducing economic waste and lessening the gamble in estimating. It has been advanced and advocated almost wholly on economic grounds. But the questions which are pressing for consideration are of both an economic and a moral character. The moral questions have sprung from unhealthy

economic conditions, and are deeply rooted in the present uncertain methods of estimating. Nearly all moral questions in business are of economic origin. While the moral questions are symptomatic, focusing attention on them must serve to strengthen an argument for the adoption of any corrective measure which reaches the cause.

There are certain common practices in the building industry which do not qualify under any recognized standards of morals, or justice, or ethics. Both architects and contractors have been responsible for the development of these practices; both have contributed reciprocally to the growth of conditions which are now pretty generally acknowledged to be steadily working to make the building industry an unprofitable field for the conscientious and self-respecting contractor. The new Standard Documents of the Institute offer a measure of relief through the recognition of the contractor's rights and provision for his securing justice without great expense, loss of time, or the sacrifice of reputation. They will also be effective in improving the conditions under which subcontracts are executed.

The Evils Arising from Incomplete Drawings and Specifications

Drawings and specifications not sufficiently explicit or complete to function fully as mediums for conveying to the bidder the information needed to prepare an accurate bid have made bidding primarily a gamble into which many factors enter that are wholly improper and irrelevant; such factors as the architect's personality and reputation for reasonable or unjust decisions; the quality of work the architect may be expected to require, irrespective of requirements of the contract documents; what chances competing bidders will take to get their bids down; and the prospects for securing inordinately profitable extras. I have known of contracts deliberately taken 15 per cent below the figured cost on the prospect of securing large profits from extra work. A contractor who enjoys an excellent reputation, said to me not long ago: "Every bid I submit is a lie. If I and other contractors got 'stung' every time we took a contract below figured cost, we would soon stop doing it." But contractors who submit lying bids do not get "stung." They succeed in turning figured losses into profits because architects are usually lax in enforcing the contract requirements, or find the enforcement of vague requirements a difficult undertaking.

Quantities the Only Exact Basis for any Contract

The quantities of labor and materials and the unit prices therefor have been thrust into the background. The quantities are taken off and priced and used merely as a groundwork on which to base the other more important speculations. I say the "other speculations" advisedly, for quantities as they are taken off by the average bidder are at best uncertain. Now, as a matter of fact, the quantities, properly priced, are the only exact basis for any contract, and they should be made so. If they could be made the one definite and specific element in the contract, they would automatically become the one definite and specific thing upon which the bid could be safely based, and in that case, the other wholly improper considerations would be completely robbed of their value and would cease to be the factors determining the contractor's chances for securing a profit or suffering a loss.

The Gambling Element in Contracting

As work has been contracted for in the past upon the basis of a whole fabric of uncertainties and unknowns, it has been perfectly natural and absolutely necessary for the contractor to seize upon every means at hand to protect himself and the profit to which he is justly entitled. It is unfortunate that the means selected have become a menace. Evil practices have developed in subletting and conducting work; like a cancer, they have eaten into the moral fiber of the contractor. Success has become a matter of shrewdness rather than knowledge and skill. That is largely the reason why the number of irresponsible and, from the technical standpoint, incompetent contractors, doing business on borrowed capital and the capital of subcontractors, has increased so amazingly within the last decade; and that is why subcontractors as a class complain so bitterly of general contractors and their methods.

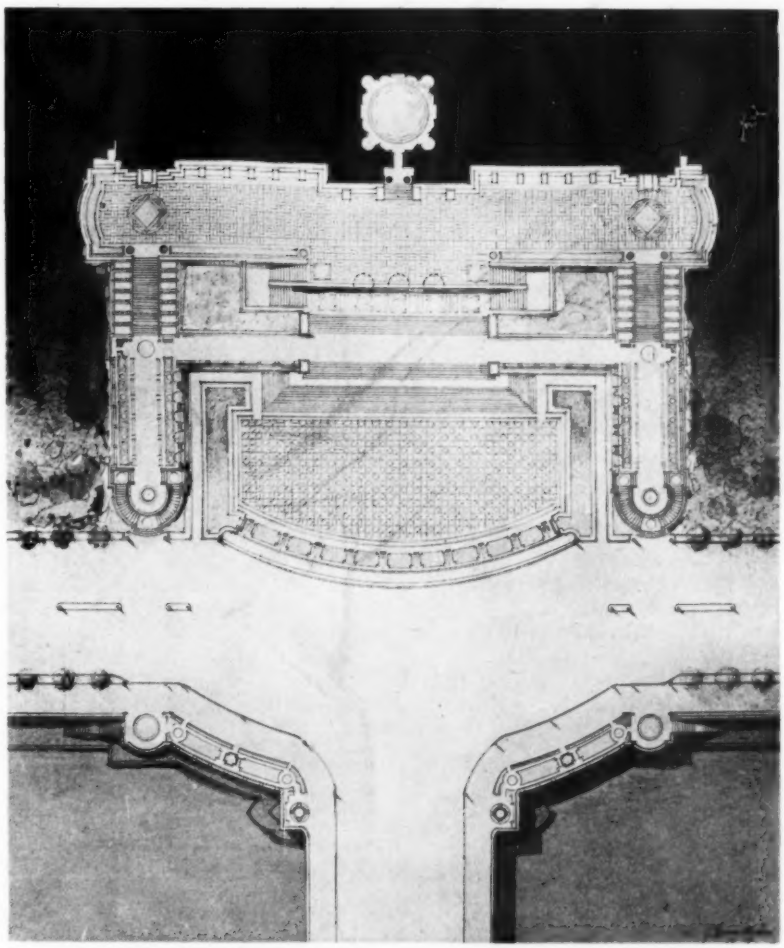
Few contractors and still fewer subcontractors, secure contracts on terms which permit honest execution and a conscientious fulfillment of the contract requirements. Materials below the standard demanded are bought because they are cheap and forced into the work with a deception which may well be characterized as scandalous. The unit cost of worked materials has been forced downward by necessity until the quality of labor and craftsmanship has been ruthlessly sacrificed to speed; for time is money. All this has happened because there is no definite basis for the contract. Manifestly we must furnish one and my conviction is that the quantity system and the accurate bill of quantities will give it.

The Serious Responsibility Confronting the Architect

Since architects are in a measure responsible for the prevailing critical conditions in the building industry, it will redound to their credit and advantage to give their earnest thought to this subject.

THE MEANING TO ARCHITECTS OF THE QUANTITY SYSTEM

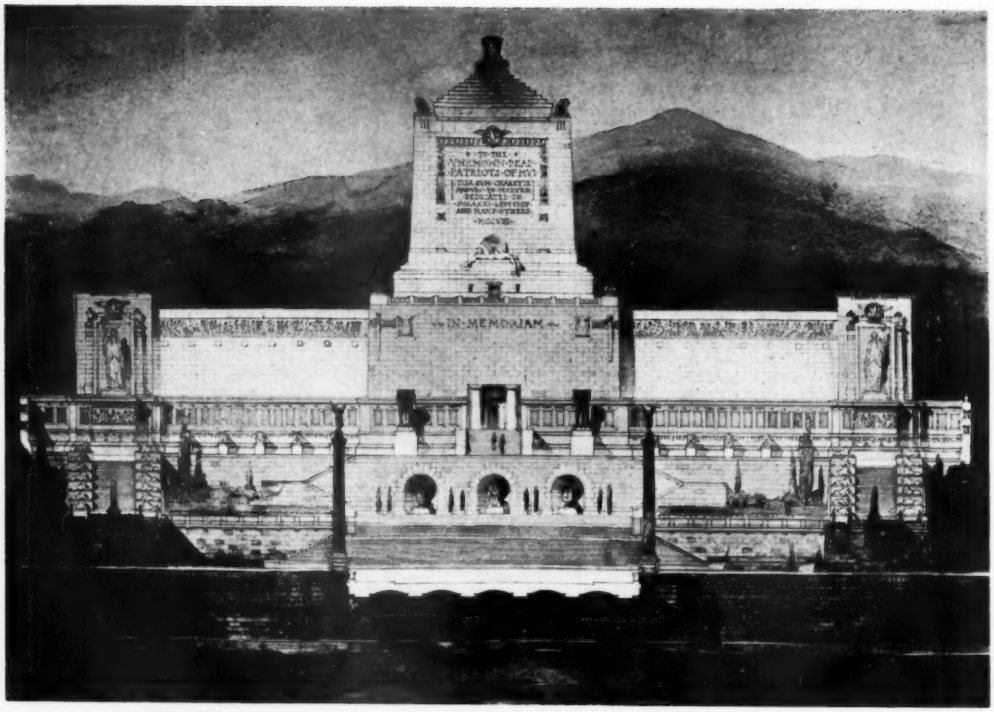
Necessity will ultimately force the adoption of the quantity system or some other corrective measure in this country. Contractors are now working in that direction. The danger lies in the fact that they can effect some sort of reform without the assistance of the architect. Subcontractors can and will force a change in the system of estimating in spite of any possible opposition by general contractors. When the change comes, it will affect the practice of architecture. Architects ought to work with contractors to the end of securing relief, for in the last analysis, their interests are identical. Architects should not slumber peacefully at the switch while the train runs off the track. It will be easier to influence and direct the development of the new system than later to correct mistakes.



THE NELSON ROBINSON, JR., TRAVELING SCHOLARSHIP IN ARCHITECTURE, HARVARD UNIVERSITY

Competition 1916–1917. Subject: A Commemorative Monument to the Unknown Dead

Won by Jean Vernon Wilson. (See the Journal for July, 1916.)



ELEVATION OF MR. WILSON'S WINNING DRAWING IN THE NELSON ROBINSON, JR., TRAVELING SCHOLARSHIP

THE MEDAL OFFERED TO THE SCHOOL OF ARCHITECTURE, HARVARD UNIVERSITY, BY THE SOCIETE DES ARCHITECTES DIPLOME PAR LE GOUVERNEMENT, OF PARIS
Won this year by Mr. Jean Vernon Wilson with his drawing for the Nelson Robinson, Jr., Traveling Scholarship, a notable achievement in scholastic competitions

Town-Planning and Housing

GEORGE B. FORD, Associate Editor

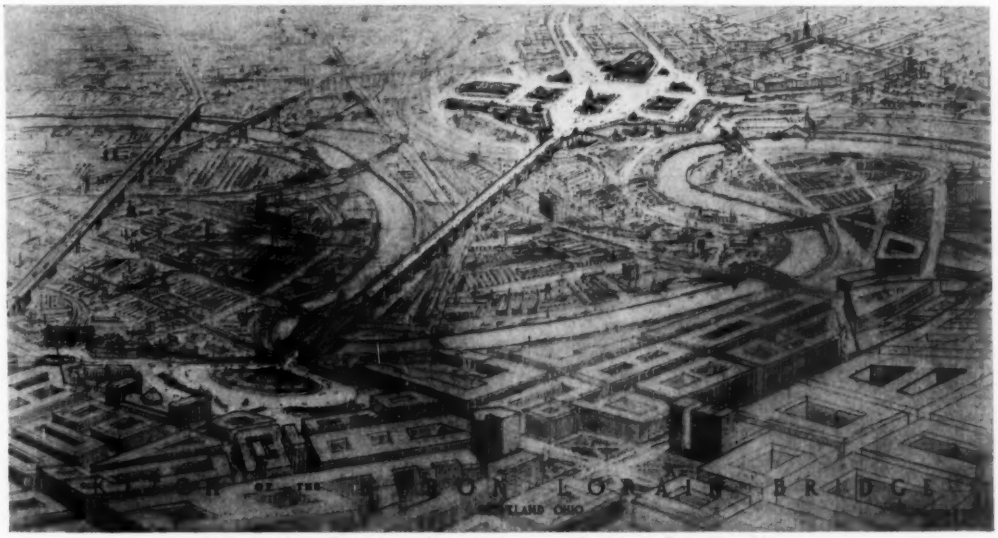
A Cleveland Bridge Problem and a Proposed Solution

The wide and tortuous valley of the navigable Cuyahoga River and its small tributary streams, in the city of Cleveland, are features that vitally affect the arterial street system of the city plan. The design of bridges and viaducts for spanning these valleys is a subject to which increasing attention is being given by city officials, architects, and the public generally. The city has learned from experience that the entire problem is one which must be studied on a broad basis, particularly in matters connected with the approaches to the bridge.

The imminent construction of the Huron-Lorain bridge lends value and interest to the studies, herewith presented, by Messrs. Walker and Weeks, architects of Cleveland. The plans were made primarily for the exhibition of studies covering local city-planning needs, prepared by various members of the Cleveland Chapter of the Institute, and shown at the meeting of the National City-Planning Conference last June. As the city-plan commission has not yet made a comprehensive plan for the development of Cleveland, the project has been treated as a local improvement, having only the most general and obvious connection with the general street system.

The type of bridge shown is similar to that adopted for the Detroit-Superior bridge in Cleveland—a steel-arch span, approached by a series of concrete arches, supporting the double-deck roadway. The lower deck provides for four surface-car tracks, and for two tracks of the projected subway; the upper is reserved to wagon and motor traffic, with flanking footways.

The schemes proposed at both the east and the west end of the bridge will reclaim districts that are now "dead" or "blighted," and will provide traffic routes on a basis of efficiency instead of the disorderly arrangement now existing. The east approach is developed as a semi-circular plaza, on



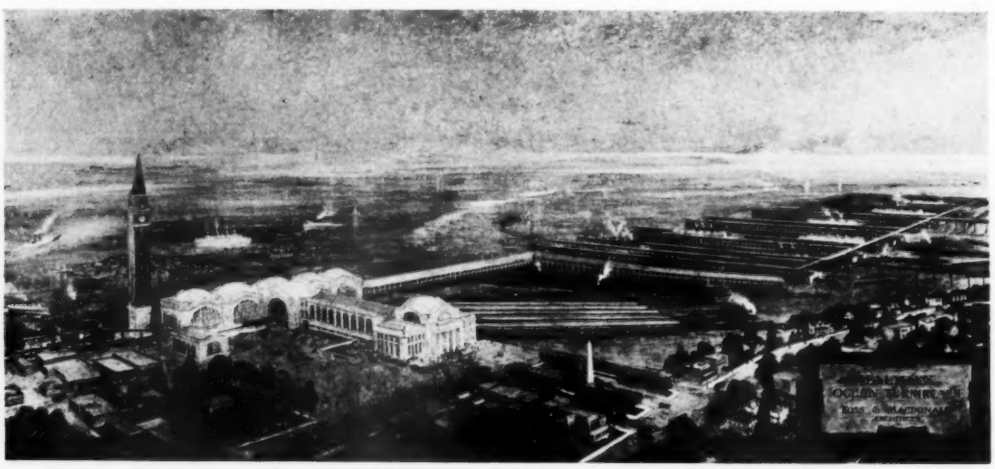
CLEVELAND.—PROPOSED HURON-LORAIN BRIDGE. GENERAL VIEW

A steel-arch span crosses the river, with a series of concrete arches, supporting a double-deck roadway on the west. The east approach with a semi-circular plaza, arranged for the convenient movement of traffic and providing sites for market stalls, and the west approach providing sites for future public buildings, will be gained by the demolition of much unsightly property and the rearrangement and widening of streets. This, with the provision of the key features of the architectural composition, would cost approximately three million dollars.

CLEVELAND.—PROPOSED HURON-LORAIN BRIDGE.
EAST APPROACH

one side with an inner main roadway and outer market road, and on the other side with driveways ascending to the upper deck of the bridge, and ramped trolley-ways descending to the lower deck. The west approach will provide a large plaza containing sites for public buildings, and decorated with gardens, fountains, and monuments. Traffic will be handled by a gyratory system similar to that of the east plaza. The slopes of the hill have been parked down to the retaining wall that masks the railway. In the opinion of the designers, a wonderful opportunity exists at the west approach for the realization of a worthy gateway to the west side.

In consideration of actual wealth-producing power, through increased tax valuation of nearby property, of an improvement of this nature, and its urgent necessity as a safeguard against serious traffic congestion in the immediate future, the cost of the project would not be excessive. Purchase of land and the provision of the key features of the architectural composition would require a sum in the neighborhood of three million dollars. A certain amount of interest has been manifested by the municipal administration, civic bodies, and individuals, since the exhibition of these studies. Whether the complete project is ever realized or not, its designers feel that its presentation and consideration will have been of some utility in the progress of Cleveland's municipal development.



HALIFAX.—NEW OCEAN AND RAILWAY TERMINALS

In the left of this illustration are shown the principal passenger and immigration building, bordering the landing-quay, and extending inland the two-level train concourse, the latter connecting with the city railroad station. This station faces a large square or plaza. At the right are shown the five great two-level piers, each capable of accommodating four vessels 600 feet in length.

The Great Rail and Water Terminal at Halifax

The City of Halifax is the most easterly established seaport in North America, is a good day's journey nearer Europe than New York, even by the fastest steamships, and possesses a well-protected harbor lying close to the open sea, and which is so wide and easily navigated that the largest ships can enter, turn, and leave by their own power, at all hours, day or night. It was to be expected that with the completion of the government-owned Canadian transcontinental railways, the Dominion authorities would make a determined bid at Halifax for this trans-Atlantic traffic created by these new lines. Extension investigations were undertaken in 1912 and 1913 by architects, engineers, and officials of the Canadian government, from which plans were drawn for a great terminal to accommodate the largest boats afloat, and which, when realized, would make the port of Halifax one of the most convenient in the world for the transfer of passengers and cargo.

The new ocean ternimals are now in an advanced state of construction, and the first basin of the new harbor appears likely to be ready for use this year. Halifax is sure to have a great future, and, in the course of this work, the question is bound to come up regarding the preparation of a town-planning scheme before the city grows larger, in which consideration will be given to all phases of the city's life related to the great terminal problem.

The entire scheme, as evolved, provides a terminal for the easy transfer of passengers and freight between trunk railroad and ocean-going vessels, but in addition permits of the handling of all railway traffic originating in or destined for the City of Halifax.

PHILADELPHIA.—MUNICIPAL AUDITORIUM ON FAIRMOUNT PARKWAY, FUNDS FOR THE ERECTION OF WHICH WERE RECENTLY VOTED

The Auditorium will have a seating capacity of 15,000. When used for exhibition purposes, 91,000 square feet of floor-space will be available. A railroad siding to the north facilitates the shipment of exhibits.

Fairmount Parkway Out of the Throes of Litigation and Soon to be Realized

Philadelphia's great parkway project, extending from the City Hall northwesterly to the entrance of Fairmount Park, is soon to be completed. Two hundred and thirty-five property-owners remaining on the line of the parkway will be given notice to vacate within ninety days. Over eight million dollars is available for meeting the claims of these owners. About one-half million dollars has been set aside for the removal of buildings and the physical construction of the great boulevard, including the extension of Logan Square. On the completion of the clearing, sites for a number of proposed public buildings will be available along the route of the parkway, including a new city hall, library, art museum and municipal auditorium. Plans for the latter were recently made public.

Various City-Planning Activities

MASSACHUSETTS is the first and only state with a federation of its city-planning commissions, or planning boards as they are officially termed. Their number is greater than those in all other states combined, but their authority is at present extremely limited. Their function is to advise the local administrative officers, without power to compel the adoption of a plan or proposal or adherence to a plan once adopted. To overcome this condition in a measure at least, and to coördinate activities, the Massachusetts Federation of Planning Boards is issuing a series of pamphlets giving needed advice and help. The first two bulletins issued covered The Functions of the Massachusetts Town-Planning Boards, The Official Plan, Town-Planning and Present Legislation in Massachusetts, and also a list of the laws and statutes that will assist in carrying out certain aspects of city- and town-planning in the Bay State, with a summary of bills that were pending before the general assembly bearing upon town- and city-planning. A useful document.

A MEASURABLE addition to the city-planning powers of Massachusetts municipalities is contained in an act of the General Assembly of the Bay State, approved May 10, 1916 (Chap. 190), which gives the mayor of any city, with the approval of council, power to appoint a board of survey of three members and fix their compensation, the city engineer to act as clerk of such a board. Under a mandatory provision, where a board of survey has been appointed, no person, firm, or corporation shall open a street without submitting to the board of survey "suitable plans and profiles" showing "also the method of drainage of the adjacent or contiguous territory." It is also provided that no street or way in the territory to which the plans relate shall be laid out or constructed except in accordance therewith, or with such further plans as may subsequently be approved by the board.

THAT INTEREST in town-planning is not limited to the western hemisphere is shown by the range of activities in British India. From Bombay, Calcutta, Madras, and Delhi, not to mention numerous smaller places, have issued numerous reports dealing with studies and investigations for town plans, which show that British enthusiasm for town-planning is reaching into remote parts of the empire. Reference to some of these activities have already been made in the Journal, and others will be reviewed in future numbers. One of the most recent advances is the enactment of a town-planning law for Bombay, which, while following, in general, the lines of the English town-planning act of 1909 (discussed in the Journal, Vol. III, No. 5), shows variations due to altered conditions of location and administration, and also to improvements in general construction. The law vests in a designated authority specific powers for the preparation and execution of plans for undeveloped areas. Contrasted with the limited powers which our American city-planning commissions enjoy and the constitutional limitations which are imposed on city authorities in the execution of improvements, such legislation as the Bombay act is notable for its breadth of appreciation of modern and constructive methods of city development and social advance.

THE CITY PLAN Committee of the Business Men's League of St. Louis is urging an appropriation of $15,000 for a study of districting in St. Louis. The official City Plan Commission, some time ago, requested the various organizations with civic interests to appoint committees on city-planning. A number of organizations have heartily joined in with the plan, among them the Civic League, the St. Louis Chapter of the Institute, the Business Men's League, and the Engineers' Club. These committees have assembled at intervals to meet with the official plan commission and certain phases of city-planning work have been assigned to the organization committees for investigation and report. The recommendation by the committee from the Business Men's League is the outcome of its study of the districting problem.

A COMMUNAL FOREST, modeled after the celebrated communal forests of Europe, is the unique feature of a town plan recently prepared for the town of Walpole, Massachusetts, a little rural industrial community of about six thousand inhabitants in eastern Massachusetts. Other cities in America have established town forests, principally as protection to their sources of water-supply, but Walpole's forest is the first to embody the element of future profit with recreational service. Through the efforts of the Town-Planning Board, 150 acres of land have already been donated by a public-spirited citizen, and the town authorities have provided funds for development. It is estimated that forty or fifty years from now the forested area will have a timber value of about three thousand dollars per acre. Meantime roads and paths laid out through the forest provide opportunities for study and recreation for the entire town. Other towns in Massachusetts are awakening to the advantages of the community forest developed for profit, and the idea should be a source of inspiration to communities throughout the country.

EMIL LORCH, professor of architecture in the University of Michigan, has been appointed by the Mayor of Detroit as a member of a consulting board to assist the Commissioner of Public Works of Detroit in the preparation of plans and estimates for the construction of a new bridge to connect Belle Isle with the mainland. The Belle Isle bridge was destroyed by fire, April 29, 1915. Previous to that, Mr. Cass Gilbert had prepared drawings for a monumental bridge at the same point, as described in the JOURNAL for June, 1915.

FIVE YEARS AGO, the Chicago Plan Commission told the people of Chicago that their greatest issue was the official adoption of the plan of Chicago. How great this issue was has been clearly brought home to the people in the progressive work of the commission. A survey of this work, with reports on improvements now under way or projected, is set forth in the sixth annual report of the Commission. Improvements along Michigan Avenue and Twelfth Street, on the Lake Front, in connection with the great railway terminals, and the post-office site, and in a number of other localities where vital planning problems are being handled with a broad vision, are the result of eternal vigilance and aggressive effort by the plan commission. It is realized that further progress will be in exact proportion to the unceasing watchfulness of the city authorities and the members of the commission, all pulling together and co-operating for the ultimate realization of the plan.

A NEW city-planning commission has been appointed and is now at work in Santa Monica, California, under the permissive law enacted in 1915. The Commission has authority to make the necessary studies for the preparation of a comprehensive plan, to advise in regard to the erection of building on public land, to prepare a building code, to devise a scheme for districting the city, and to pass on proposed building and sanitary ordinances and public utility franchises.

Book Reviews

A History of Architecture.

By Sturgis & Frothingham, Vols. III and IV. Published by Doubleday, Page & Company. Price $5.00 per volume.

These two volumes complete the history of architecture which was begun by Mr. Russell Sturgis and left incomplete at his death.

In the third volume, Professor Frothingham traces the origins of Gothic architecture in France by showing the development of certain structural features, such as vaulting, pier, column, capital, window. Around these structural details the story is made to crystallize, and its telling is done so charmingly, with such skill and thoroughness, in a style so easy and graceful, that the reader's enthusiasm and admiration is aroused. It can be stated without fear of contradiction that the volume on Gothic architecture in France is so wisely and sympathetically written, so masterly, that little is left for another writer.

What is striking about the author's point of view—and yet how natural and obvious—is that he views architecture always joined to its social causative environment. He does not dissect it from civilization, divest it of human interest, make its history a catalogue of dates, building forms and materials. We can all recall such histories of architecture. The author regrets that limitations of space prevent him from referring oftener to the social and economic conditions environing the different phases of Gothic development. However, enough glimpses and hints of the social factors, knowledge of which alone make architecture understandable, are given to stimulate the reader's imagination and whet his desire for greater knowledge. That historians have almost invariably ignored the evidences of a people's history afforded by its architecture, and relied only upon the written word for evidence of its past history, is a striking commentary upon their stupidity, and perhaps a partial explanation of the lack of interest inspired by the average history.

In Chapter 1, the development of vaulting is admirably shown. Why the French should have been content with the simple forms of quadripartite and sexpartite vaulting, while the English developed the intricate beauty of fan vaulting, is perhaps due to different esthetic ideals to which the vaulting was made subservient. The naves of the French cathedrals were made far loftier than those of the English cathedrals, and there resulted an esthetic quality of spacious loftiness, an upward soaring, which negatived gravity. This quality, so admirably attained at Amiens, and at that most amazing of all interiors, Beauvais, would in no wise have been improved by making the vaulting more prominent and noticeable, with the many ribs of fan vaulting. The English, with lower roofs, sought other ideals and created a quite different perfection.

The author does not contrast the significant fact that the French cathedrals are civic and that English cathedrals are rural, the former the product of civic enterprise, democratic in purpose and inspiration; the latter of wealthy monastic orders,

built for the most part in immense parks on the outskirts of cities. The resulting differences of character and quality are striking, and differences of usage great. Canterbury and Chartres, Rheims and Durham, what lovely dissimilar emotions are evoked by their names! How out of place, out of character, if one were changed to the other's site!

A few quotations will show the style and exactness of judgment of the author.

"These characteristics (of Gothic) are primarily constructive and secondarily esthetic. The science that dictated was exulted in. Walls were practically eliminated as a necessity. The scheme was to reconcile safety with the extremest possible preponderance of voids over solids, in order to secure plenty of light and unity in church interiors. This was done under the guidance of a lover of aërial perspective and vertical effects."

That science did not always dictate to esthetics is demonstrated by the piers of Notre Dame, where, since the vaulting is sexpartite, and consequently the thrust and weight on the diagonal ribs greater than on the intermediate ribs, the columns supporting the piers should alternate in size, if logic be followed. But the Gothic architects—praise be to them!—were willing to sacrifice logic for unity of effect, and made the columns of the nave all alike, while they logically alternated in size, where no unity of effect was possible, the columns of the aisles.

There are copiously illustrated chapters on figured sculpture, of which the portals of Chartres and Rheims are such dazzling examples; on civic, military, and monastic Gothic, in which category the Hotels de Ville of Compiégne and St. Quentin, the Palais de Justice at Rouen, Pierrefont, Coucy, Avignon, furnish some of the illustrations.

Chapters on Gothic in Spain, in Portugal, Italy and Germany, the Netherlands, complete the volume which has altogether 466 drawings and photo-engravings. In the fourth volume the history of Gothic architecture is completed, with a history of Gothic architecture in England, to which the author devotes eighty-eight pages and ninety-one illustrations. Germany contributed to Gothic architecture but one original feature, the open traceried spire, an achievement of surpassing imaginative merit. The spires of Strassburg, Ulm, and Freiburg are an architectural heritage of which man may well be proud. England's contribution to Gothic architecture was far greater. Her share was almost as great as that of France. In these eighty-eight pages, its development, its particular character and charm, its distinctive plans, forms of vaulting, its towers and great eastern windows, are shown. The English cathedrals lack the elaborately sculptured entrance doorways of the French cathedrals. Was it a difference of environment, the one rural, the other civic, that accounts for this striking difference of treatment? In the English case, an absence of a populace using the cathedral for its celebrations and fêtes? The following quotations sum up Professor Frothingham's judgment: "One of the special gifts of English designers was the understanding of articulated mass and (consisted) in the hewing out of dramatic contrasts, in a presentation of a series of picturesque and strong effects. In doing this, one defect is evident. It is the lack of logic. The façades are not the logical expression of the outline of the building."

"One may differ as to the good taste of a great deal of the decorated vaulting, but some of it is undoubtedly beautiful as well as original and constructively brilliant. To put the matter in two words, the use of the vault as a vehicle of design and decoration, and make it finally, in fact, the main center of internal decoration, is an English invention, and of the greatest importance, whether one approve it or not."

In comparison with the author's sympathetic and comprehensive treatment of Gothic architecture his handling of Renaissance and modern architecture, to which 242 pages are devoted, is meager and disappointing. The disappointment is that there is no fifth volume!

On page 97 the author repeats the familiar objection to the use of iron to take up the thrust of vaulting, as used by the Italians in their domes and arcades, and brands such use unscientific. This is the objection of a near-sighted theoretician and not of a constructor.

What could be more scientific than to use materials in accordance with their properties, masonry for compression, iron for tension? If that be so, a system of construction that combines the two materials, using each material in accordance with its properties, is as perfectly scientific as one can imagine.

It is to be regretted that there are no illustrations of Wren's parish churches; none of Louis XIV architecture, save a poor illustration of the Invalides; and that modern architecture is so inadequately treated, France being represented only by the Madeleine and the staircase of the Opera House and the United States dismissed with a paragraph of eleven lines, without illustrations. Better it were if modern architecture had not been mentioned—again the objection that there is no fifth volume.

In conclusion, these two volumes are a literary achievement of great merit, and at the same time the most interesting and most comprehensive history of architecture that has yet appeared.

WALTER D. BLAIR.

THE AMERICAN INSTITUTE OF ARCHITECTS

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LIST OF CHAPTERS, 1916

BALTIMORE.—*Josias Pennington, 330 North Charles Street; †Clyde N. Friz, 1523 Munsey Bldg., Baltimore.

BOSTON.—*Ralph Adams Cram, 15 Beacon St.; †Charles N. Cogswell, Old South Bldg., Boston.

BROOKLYN.—*Frank J. Helmle, 190 Montague Street, Brooklyn; †Carroll H. Pratt, 103 Park Avenue, New York.

BUFFALO.—*Franklyn J. Kidd, 110 Franklin St.; †Robert North, 1314 Prudential Bldg., Buffalo.

CENTRAL NEW YORK.—*Edwin S. Gordon, 300 Sibley Block; †Otto Block, 633 Mercantile Bldg., Rochester.

CINCINNATI.—*George M. Anderson, Ingalls Bldg.; †Louis G. Dittoe, Carew Bldg., Cincinnati.

CLEVELAND.—*Gustave B. Bohm, 1627 Williamson Bldg.; †Herbert B. Briggs, 669 Rose Bldg., Cleveland.

COLORADO.—*Thomas MacLaren, Hagerman Bldg., Colorado Springs; †Harry J. Manning, Acting Sec'y., 214 Majestic Bldg., Denver.

COLUMBUS.—*C. F. Richards, 1006 Hartman Bldg.; †Charles L. Inscho, 145 North High St., Columbus.

CONNECTICUT.—*Leoni W. Robinson, 42 Church Street, New Haven; †W. R. Briggs, Security Bldg., Bridgeport.

DAYTON.—*Harry J. Williams, 591 Arcade Bldg.; †Harry I. Schenck, 591 Arcade Bldg., Dayton, Ohio.

GEORGIA.—*Thomas H. Morgan, Grant Bldg., †William J. Sayward, Candler Bldg., Atlanta.

ILLINOIS.—*Frederick W. Perkins, 332 South Michigan Ave.; †Elmo C. Lowe, 14 East Jackson Blvd., Chicago.

INDIANA.—*M. S. Mahurin, Swinney Block, Fort Wayne; †Herbert W. Foltz, Lemcke Annex-Suite 1456, Indianapolis.

IOWA.—*Parke T. Burrows, 62–64 Davenport Savings Bank Bldg., Davenport; †Eugene H. Taylor, 222 S. Third St., Cedar Rapids.

KANSAS CITY.—*Ben J. Lubschez, 200 Reliance Bldg.; †George M. Siemens, 214 Scarritt Bldg., Kansas City.

LOUISIANA.—*Charles A. Favrot, 505 Title Guarantee Bldg.; †Nathan Kohlman, Godchaux Bldg., New Orleans.

LOUISVILLE.—*J. C. Murphy, 714 Louisville Trust Bldg.; †Val P. Collins, Paul Jones Bldg., Louisville, Ky.

MICHIGAN.—*M. R. Burrowes, 701 Trussed Concrete Bldg.; †Dalton J. von Schneider, 1103 Union Trust Bldg., Detroit.

MINNESOTA.—*Edwin H. Hewitt, 716 Fourth Avenue; †Edwin H. Brown, 716 Fourth Avenue., Minneapolis.

NEW JERSEY.—*Henry Baechlin, 665 Broad St., Newark; †Hugh Roberts, 1 Exchange Place, Jersey City.

NEW YORK.—*William Emerson, 597 Fifth Avenue; †Stowe Phelps, 20 West 43rd Street, New York City.

NORTH CAROLINA.—*Hill C. Linthicum, 703 Jackson St., Durham; †Willard C. Northup, Winston-Salem.

OREGON.—*W. G. Holford, 1021 Chamber of Commerce Bldg.; †Joseph Jacobberger, Board of Trade Bldg., Portland.

PHILADELPHIA.—*Horace Wells Sellers, Stephen Girard Bldg.; †Edward A. Crane, 1012 Walnut St., Philadelphia;

PITTSBURGH.—F. A. Russell, 336 Fourth Ave.; †Charles †T. Ingham, 323 Fourth Ave., Pittsburgh.

RHODE ISLAND.—*Eleazer B. Homer, 87 Weybosset St.; †John Hutchins Cady, 10 Weybosset St., Providence.

SAN FRANCISCO.—*W. B. Faville, Balboa Bldg.; †Sylvain Schnaittacher, 233 Post St., San Francisco.

SOUTH CAROLINA.—*A. W. Todd, 39 Broad St.; †James D. Benson, 39 Broad St., Charleston.

SOUTHERN CALIFORNIA.—*S. Tilden Norton, 604 Title Insurance Bldg.; †A. R. Walker, Hibernian Bldg., Los Angeles.

SOUTHERN PENNSYLVANIA.—*C. Emlen Urban, Woolworth Bldg., Lancaster; †Reinhardt Dempwolf, 123 E. Philadelphia St., York.

SAINT LOUIS.—*E. J. Russell, Chemical Bldg.; †Walter L. Rathmann, Chemical Bldg., St. Louis.

TEXAS.—*O. J. Lorehn, 302 Le Power Bldg., Houston; †F. E. Giessecke, University of Texas, School of Architecture, Austin.

TOLEDO.—*E. O. Wallis, 208 The Nasby; †George S Mills, Ohio Bldg., Toledo.

VIRGINIA.—*Clarence A. Neff, 600 Seaboard Bank Bldg., Norfolk; †William C. Noland, 914 Travelers Bldg., Richmond.

WASHINGTON (D. C.).—*E. W. Donn, Jr., 808 Seventeenth St.; †Oscar G. Vogt, 405 Corcoran Bldg., Washington

WASHINGTON STATE.—*Arthur L. Loveless, 513 Colman Bldg.; †D. R. Huntington, 513 Colman Bldg., Seattle.

WISCONSIN.—*H. W. Guthrie, 424 Jefferson St.; †Henry J. Rotier, 813 Goldsmith Bldg., Milwaukee.

WORCESTER.—*George H. Clemence, 405 Main St.; †Lucius W. Briggs, 390 Main St., Worcester, Mass.

* Presidents.

† Secretaries.

MINNEAPOLIS—THE GATEWAY

In the foreground the charming Edmund J. Phelps fountain, of which Mr. Charles Wells is the sculptor. Its marble shaft, with figures in low relief, illustrates the growth of the city from the Red Man's occupation to the present time. Messrs. Hewitt & Brown, Architects.